# Chapter 2

# ALTERNATIVES

**Donner Lake**

Photograph by Jim Bailey

**Independence Lake**

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# Chapter 2
# ALTERNATIVES

This chapter describes the process used to develop the alternatives, describes those alternatives considered and rejected, and provides a narrative and tabular comparison of the alternatives considered. Additionally, a table at the end of the chapter (table 2.10) summarizes the effects of the alternatives on the resources of the study area.

## I. DEVELOPMENT OF ALTERNATIVES

The Truckee River Operating Agreement (TROA) has been under negotiation since 1990. The following section presents a brief history of negotiations and a description of the process for developing alternatives.

### A. History of Negotiations

Use of Truckee River water has been in dispute for more than a century, beginning with the construction of a dam across the outlet of Lake Tahoe in 1870. (See chapter 1, "History of Reservoir and River Operations.") The Washoe Project Feasibility Report by the Bureau of Reclamation (BOR) in 1954 stimulated negotiations to allocate use of Truckee River water between Nevada and California. In 1955, the California-Nevada Interstate Compact Commission, with representatives from the States of California and Nevada and the United States, was formed to develop an interstate allocation. Ten years of negotiations, which were expanded to include the waters of the Carson and Walker Rivers, produced a draft interstate compact. Ultimately, the State legislatures passed legislation adopting the draft compact, but it was never ratified by the Congress.

The latest effort to resolve the water issues and to provide for future demands was the passage by the Congress of Public Law (P.L.) 101-618 in 1990. Many parties—public agencies, water users, and environmental groups—participated in developing that legislation. (See chapter 1, "History of Reservoir and River Operations.") In addition to many other water use issues, P.L. 101-618 addresses the Preliminary Settlement Agreement as Modified by the Ratification Agreement (PSA) and the draft Interstate Compact ratified by Nevada and California in the early 1970s.

On December 10, 1990, the Department of the Interior (Interior) conducted an organizational meeting to discuss its obligations and responsibilities—timing, direction, organization, coordination, and cooperation—for implementing P.L. 101-618, including negotiation of the Draft Agreement. That meeting was widely announced and well attended; a number of agencies, governments, and organizations, including the five mandatory signatories to the Draft Agreement (United States, California, Nevada, Pyramid Lake Paiute Tribe of Indians [Pyramid Tribe], and Sierra Pacific Power Company [Sierra Pacific]), were represented.

On February 20-21, 1991, Interior conducted the first of many working meetings to "draft a management plan for the preparation of the Truckee River Operating Agreement over the next 3 or 4 years." In addition to the five mandatory signatories, eight other negotiating parties (for a total of 13) were identified to participate in this process. Invitations were also extended to interested parties to attend as observers. The 13 negotiating parties were:

United States (Departments of the Interior and Justice)
State of Nevada
State of California
Pyramid Tribe
Sierra Pacific/Truckee Meadows Water Authority (TMWA)
Washoe County, Nevada
City of Reno, Nevada
City of Sparks, Nevada
Washoe County Water Conservation District
City of Fernley, Nevada
Truckee Carson Irrigation District (TCID)
Churchill County, Nevada
Fallon Paiute-Shoshone Tribes

TCID, Churchill County in Nevada, and the Fallon Paiute-Shoshone Tribe have not continued to participate in the negotiations. Since 1991, Carson-Truckee Water Conservancy District, Truckee-Donner Public Utility District, Sierra Valley Water Company, and North Tahoe Public Utility District have joined the negotiations. This group of 14 parties negotiated the terms of the Draft Agreement.

Numerous negotiating sessions, technical meetings, drafting sessions, and public plenary meetings have been conducted in the 13 years since the first meeting, and a number of public and private interest groups from Nevada and California have participated in the negotiation process as observers and commentators. In May 1996, the parties completed a Draft Agreement, and Interior and California jointly issued a draft environmental impact statement/environmental impact report (DEIS/EIR) for that Draft Agreement in February 1998. Negotiations resumed in 1999 to address a number of new issues that had emerged since 1996. This second set of negotiations, completed in October 2003, resulted in a Draft Agreement that was substantially different from the May 1996 version. As a result, a decision was made to issue a revised DEIS/EIR. This revised DEIS/EIR evaluates the October 2003 version of the Draft Agreement.

## B. Development Process for the TROA Alternative

Restrictions on current reservoir operations (chapter 3, "Water Resources: Affected Environment" describes current conditions) do not permit operational flexibility necessary to serve future municipal and industrial (M&I) demand in Truckee Meadows during droughts and to enhance riverine habitat for Pyramid Lake fishes. Therefore, easing or removing these restrictions was central to developing the Draft Agreement.

During the negotiation process, several alternatives for increasing operational flexibility and efficiency of existing reservoirs in the Lake Tahoe and Truckee River basins were developed, evaluated, and submitted to the negotiating parties (parties) for consideration. As each alternative was considered, elements of the alternative that were acceptable to the parties became part of the proposed agreement, and those not acceptable to the parties were rejected.

The process of developing alternatives began in 1992, concurrent with negotiations. The initial intent was to develop and analyze a range of reasonable alternatives for the EIS/EIR, assuming the negotiated agreement would fall within that range.

By 1994, the alternatives being considered gave individual priority to specific issues identified through the scoping process or negotiations, as follows:

- Enhancements for endangered and threatened species.
- Enhancements for general fish and wildlife resources.
- Maintenance of recreational pools in reservoirs.
- Storage of California's surface water.
- Water supply for drought relief in Nevada.

The parties explored these thematic alternatives to determine if elements of any of these might reasonably fit into an agreement framework. In 1995, the parties began to evaluate the potential effects of these alternatives in light of water rights, storage, and streamflow.

Analysis of these alternatives was presented in the Report to the Negotiators. Distributed to the negotiators in January 1996, the report followed the format of an EIS/EIR (summarized in "Alternatives Considered and Rejected").

In reviewing the Report to the Negotiators, and through subsequent negotiations, the parties concluded that many identified water management goals could be achieved only by providing flexibility to allow exchanges and transfers of water among reservoirs. In most cases, the objective of an alternative could not be fully achieved unless the parties agreed on cooperative management measures, including relinquishing control of timing of water releases. This conclusion led to negotiations on topics such as exchange procedures, including mandatory exchanges, priorities for exchanges, and accounting.

The Report to the Negotiators brought recognition that the agreement should, to the extent possible, address the thematic issues that had previously been described as alternatives. The negotiation process then began to separate those elements that could be agreed upon and made part of the agreement from those that could not be agreed to by one or more of the mandatory signatory parties and were, therefore, dropped from further consideration. As a result of the negotiations, alternatives discussed in the Report to the Negotiators were eliminated as reasonable alternatives to the Draft Agreement because they did not meet the requirements of P.L. 101-618.

A DEIS/EIR was published in 1998. Negotiations since that time have resulted in a number of changes to the Draft Agreement; also, another action alternative was developed. Therefore, it was decided that the purposes of the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) would be better served by issuing a revised draft and allowing comments on it before proceeding to the final EIS/EIR.

## C. Alternatives Considered

Three alternatives to address future conditions (the year 2033) are evaluated in this revised DEIS/EIR: No Action Alternative (No Action), Local Water Supply (LWSA), and TROA Alternative (TROA). Potential effects of the action alternatives are compared to No Action as well as to current conditions (chapter 3). Current conditions are not adequate to serve future demands.

Adoption and implementation of the Draft Agreement—represented by TROA—is the proposed action. Without adoption of the Draft Agreement, operation of all reservoirs[1] under No Action or LWSA would continue to be the same as under current conditions. LWSA is an action alternative similar to No Action but with additional water supply options that may be authorized by local government agencies. Table 2.1 provides a comparison of water management provisions among the alternatives.

Table 2.1.—A comparison of water management provisions among the alternatives

| Text sections | No Action | LWSA | TROA |
|---|---|---|---|
| **B. Interstate allocation** | | | |
| Interstate Allocation of Truckee River and Lake Tahoe | 1. Though not in effect without Federal approval, States would probably abide by allocation in Interstate Compact<br><br>2. Continue moratorium or policy equivalent on issuing new surface water rights in California | 1. Same as No Action<br><br>2. Approval of some pending surface water rights applications in California | 1. Truckee River and Lake Tahoe allocation between California and Nevada fully executed as provided in P.L. 101-618<br><br>2. Approval of some pending surface water rights applications in California<br><br>3. Establishes well drilling criteria for the upper Truckee River basin |

[1] The term "all reservoirs" refers collectively to the five Federal reservoirs (Lake Tahoe and Prosser Creek, Stampede, Boca, and Martis Creek Reservoirs) and the two non-Federal reservoirs (Donner and Independence Lakes) in the Lake Tahoe/Truckee River system. This term is not used in the Draft Agreement.

Table 2.1.—A comparison of water management provisions among the alternatives

| Text sections | No Action | LWSA | TROA |
|---|---|---|---|
| **C. Water operations and facilities** | | | |
| **1. Water categories** | | | |
| Water categories may be stored in all reservoirs | Project Water and Private Water | Same as No Action | Credit Waters in addition to Project Water and Private Water |
| **2. Floriston Rates** | | | |
| Floriston Rates | As required by General Electric Decree and *Orr Ditch* Decree – may be reduced to serve *Orr Ditch* Decree water rights during drought | Same as No Action | Floriston Rate Water could be retained to accumulate Credit Water or used to maintain Floriston Rates |
| **3. Reservoir operations** | | | |
| Project Water and Private Water operations (storage and release priorities) | Same as current operations | Same as No Action | Most Project Water and Private Water operations would continue, except some Credit Water operations could change Stampede and Prosser Project Water operations |
| Flood control and dam safety | Same as current operations | Same as No Action | Same as No Action |
| **a. Accumulation, storage, and release** | | | |
| **i. Lake Tahoe and Boca Reservoir** | | | |
| Lake Tahoe and Boca Reservoir operations | Store and release Floriston Rate Water for maintenance of Floriston Rates in accordance with the Truckee River General Electric Decree and Truckee River Agreement (TRA) | Same as No Action | Floriston Rate Water could be retained to accumulate Credit Water or used to maintain Floriston Rates |
| **ii. Donner Lake** | | | |
| Private Water operations | TMWA and TCID operate in accordance with the 1943 Donner Lake Indenture and dam safety | Same as No Action | Similar to No Action, except TMWA Private Water could be used to create M&I Credit Water |
| **iii. Prosser Creek Reservoir** | | | |
| Store and exchange Tahoe-Prosser Exchange Water for minimum releases from Lake Tahoe | According to TPEA | Same as No Action | Elements of Tahoe-Prosser Exchange Agreement (TPEA) retained, but Credit Water releases could make TPEA exchange water unnecessary |

Table 2.1.—A comparison of water management provisions among the alternatives

| Text sections | No Action | LWSA | TROA |
|---|---|---|---|
| Use Project Water for minimum reservoir releases and Pyramid Lake fishes consistent with the Endangered Species Act of 1973, as amended (ESA) | Yes | Same as No Action | Expands maintenance of minimum releases and continues use of water for Pyramid Lake fishes, even if they are no longer listed |
| 9,800 acre-feet of Project Water retained in storage until following year | Reserved for possible TPEA exchange during following year | Same as No Action | Credit Water reserved in lieu of Project Water for TPEA exchange the following year and could be drawn down to 5,000 acre-feet in the fall |
| **iv. Independence Lake** | | | |
| Store and release Private Water | To serve immediate M&I demand | Same as No Action | TMWA could create M&I Credit Water or serve immediate M&I demand |
| Store and release Fish Water, Fish Credit Water, and Joint Program Fish Credit Water | No | No | Provide spawning access for Independence Lake Lahontan cutthroat trout (LCT) by maintaining lake elevation |
| **v. Stampede Reservoir** | | | |
| Storage permit | 126,000 acre-feet of Fish Water may be accumulated annually | Same as No Action | Supports permit to allow additional Fish Water to be stored in available space (up to 100,000 acre-feet) as Fish Credit Water |
| Project Water used for Pyramid Lake fishes consistent with ESA and U.S. District court ruling | Yes | Same as No Action | Project Water used for Pyramid Lake fishes even if de-listed under ESA, but would be junior in priority to some Credit Water operations |
| Interim Storage Agreement | Continue for duration of agreement | Same as No Action | Terminated |
| Hydroelectric power generation | Incidental to reservoir release | Same as No Action | Same as No Action |
| Storage of Water Quality Water | Only as exchange for Stampede Project Water | Same as No Action | Allows implementation of Truckee River Water Quality Settlement Agreement (WQSA), managed pursuant to WQSA |
| **vi. Martis Creek Reservoir** | | | |
| Use to temporarily store flood water | Yes | Same as No Action | Same as No Action |

Table 2.1.—A comparison of water management provisions among the alternatives

| Text sections | No Action | LWSA | TROA |
|---|---|---|---|
| **vii. Lahontan Reservoir** | | | |
| Use to store water for Carson Division | Yes | Same as No Action | Same as No Action |
| **b. Recreation** | | | |
| Maintenance of pools | None | Same as No Action | Not required, but Administrator would encourage the scheduling of releases to meet recreation objectives in California Guidelines. U.S. would attempt to maintain 19,000 acre-feet in Prosser Creek Reservoir during summer. |
| **c. Minimum fish pools** | | | |
| Maintenance of pools | None | None | 5,000 acre-feet in Prosser Creek Reservoir |
| **d. Minimum reservoir releases** | | | |
| a. As shown in table 2.3 | a. Some releases not mandatory | a. Same as No Action | a. Releases would be mandatory and a few would be greater than table 2.3 |
| b. Use of credit water to enhance minimum releases | b. No | b. No | b. Enhanced minimum releases required to the extent Credit Water exchanged |
| **e. Flood control operations (reservoirs)** | | | |
| Operations during flood conditions | In accordance with U.S. Army Corps of Engineers (COE) requirements | Same as No Action | Same as No Action |
| **f. Spills and precautionary releases** | | | |
| Operations during spills and precautionary release | In accordance with COE and dam safety requirements | Same as No Action | In accordance with COE and dam safety requirements, generally Credit Waters spill before Project Water |
| **g. Reservoir pumping** | | | |
| Lake Tahoe | Requires Federal court order, Secretary's approval for irrigation, approval of California and Nevada for M&I, and according to applicable laws | Same as No Action | Requires Federal court order, approval of California, Nevada, and Secretary only for M&I during extreme drought conditions and according to applicable laws |
| Independence Lake | Obtain necessary California permits and comply with Federal and State laws | Same as No Action | Same as No Action |

Table 2.1.—A comparison of water management provisions among the alternatives

| Text sections | No Action | LWSA | TROA |
|---|---|---|---|
| **h. Emergencies** | | | |
| Emergency and maintenance operations | Reservoir operations would not interfere | Same as No Action | Same as No Action |
| **4. Truckee River hydroelectric** | | | |
| a. Sierra Pacific hydroelectric diversions | a. Single purpose water right—requires maintenance of Floriston Rates | a. Same as No Action | a. Sierra Pacific would waive single purpose water right so Credit Water could be accumulated |
| b. Hydroelectric bypass flow | b. Minimum of 150 cfs at Farad, and 50 cfs (assumes Sierra Pacific would continue bypass) at each of Fleish, Verdi, and Washoe | b. Same as No Action | b. 50 cfs bypass would be mandatory, 150 cfs minimum bypass at Farad would be replaced by TROA provisions, and some Fish Water to also be bypassed |
| c. Divert any water from river to remove ice from Highland Ditch during December – February | c. Yes | c. Same as No Action | c. TMWA could continue to divert water from the river, except for Fish Water and Fish Credit Water released to compensate for ditch diversion. |
| d. Accumulation of Credit Water adverse to Sierra Pacific's hydroelectric water rights under Claims Number 5 through 9. | d. No | d. No | d. Sierra Pacific would not object as long as compensated according to TROA provisions |
| **5. Little Truckee River Diversion to Sierra Valley** | | | |
| About 7,000 acre-feet of Little Truckee River water could be exported annually to Sierra Valley | Yes | Same as No Action | Yes, except water could be acquired and retained as Credit Water in the Truckee River basin. |
| **6. Municipal and industrial water resources** | | | |
| **a. TMWA—Actions to meet future M&I demand of 119,000 acre-feet per year** | | | |
| 1. Exercise of existing water rights | 1. Continue to exercise rights to 40 cfs, Private Water, acquired irrigation water rights, and Interim Storage Agreement Water | 1. Same as No Action | 1. TMWA would continue to exercise existing water rights and Credit Water would replace Interim Storage Agreement Water |

Table 2.1.—A comparison of water management provisions among the alternatives

| Text sections | No Action | LWSA | TROA |
|---|---|---|---|
| 2. Transfer of irrigation water rights to M&I use | 2. Developers would continue to be required to dedicate former irrigation water rights for new M&I service | 2. Same as No Action | 2. Developers would dedicate former irrigation water rights at a 1.11/1.00 ratio, the excess used to accumulate Credit Water. U.S. would not object to TMWA acquiring TCID's half of Donner or seeking permission to pump 2,000 from Sparks Marina Lake |
| 3. Pumping Truckee Meadows groundwater | 3. Normal water years, 12,570 acre-feet<br><br>Dry water years, up 22,000 acre-feet | 3. Normal water years, 12,570 acre-feet<br><br>Dry water years, up to 26,500 acre-feet<br><br>Initiate a 1,000 acre-feet per year recharge program | 3. Normal water years, 12,570 acre-feet<br><br>Dry water years, 15,950 acre-feet |
| 4. Water conservation | 4a. Water saved through meter retrofit would *not* be reserved for dry water years<br><br>4b. Anticipated water conservation:<br>10% normal water years<br>19% dry water years | 4a. Same as No Action<br><br>4b. Anticipated water conservation:<br>10% normal water years<br>14.7% dry water years | 4a. Water saved through meter retrofit would be reserved for dry water years as Credit Water.<br><br>4b. Anticipated water conservation:<br>10% normal water years<br>15% dry water years |
| **b. City of Fernley** | | | |
| Actions to meet future M&I demand | Use groundwater and surface irrigation rights from the Newlands Project | Same as No Action | In addition to using surface water and groundwater, excess surface water stored as Credit Water, if included in final Agreement |
| **c. Lake Tahoe in Nevada** | | | |
| Actions to meet future M&I demand | Diverted from tributaries and pumping Lake Tahoe and groundwater | Same as No Action | Same as No Action |
| **d. Lake Tahoe and Truckee River basins in California** | | | |
| Actions to meet future M&I demand | Truckee River basin:<br>Increase annual ground-water usage by 12,030 acre-feet<br><br>Lake Tahoe basin:<br>Increase annual surface/ groundwater usage by 4,300 acre-feet | Truckee River basin:<br>1. Increase annual surface water diversions by 1,200 acre-feet<br><br>2. Increase annual groundwater usage by 10,830 acre-feet<br><br>Lake Tahoe basin:<br>Increase annual combined surface water/groundwater usage by 4,300 acre-feet | Same as LWSA |

Table 2.1.—A comparison of water management provisions among the alternatives

| Text sections | No Action | LWSA | TROA |
|---|---|---|---|
| **7. Administration, accounting, and schedule** | | | |
| Administration of *Orr Ditch* Decree | Federal Water Master | Same as No Action | Federal Water Master with Administrator would encourage scheduling parties to follow |
| **8. Additional elements unique to TROA** | | | |
| a. California Guidelines for flows and storage | No incentive to abide by any guidelines | No incentive to abide by any guidelines | Administrator would encourage scheduling parties to follow |
| b. Habitat restoration fund | No | No | Parties to TROA would establish a 30-year fund for riverine habitat restoration |
| c. Storage contract and hydroelectric compensation | No | No | Parties to TROA would have storage contract with BOR and Sierra would be compensated for the loss of hydroelectric power generation |

The three alternatives also include projections by TMWA, city of Reno, city of Sparks, and Washoe County (March 12, 2003, letter[2] to the Bureau of Indian Affairs in attachment C) that different amounts of supplemental water[3] from water right acquisitions, groundwater pumping and recharge, and water conservation practices would be secured under each alternative to meet future M&I demand in Truckee Meadows by 2033. Because TMWA is responsible for a Truckee Meadows water supply and has undertaken a resource planning process to evaluate all alternative water supplies (2005–2025 Water Resource Plan: Working Draft Volume 2, November 5, 2002), these projections were included in the alternatives.[4] In addition, the alternatives include projections by California Department of Water Resources (CDWR) that different amounts of surface water and groundwater would be used in the Lake Tahoe and Truckee River basins in California under each alternative. (See attachment D.)

## II. NO ACTION

Evaluation of No Action is required by regulations implementing both NEPA (40 Code of Federal Regulations [CFR] 1502.14(d)) and CEQA (Title 14, California Code of Regulations [CCR] section 15126.6). No Action describes water management in the

[2] Projections given in this letter were based on TMWA's 2005-2025 Water Resource Plan, March 2003. TMWA's board of directors accepts this water budget and water resource plan as fulfillment of its responsibility under the Joint Powers Authority agreed to by Washoe County, Reno, and Sparks on October 20, 2000.

[3] See the associated section 6.a in each alternative for a description of supplemental water resources.

[4] See the associated section 6.d and table 2.5 for a description of California water usage associated with each alternative.

Truckee River basin if the proposed action or other action alternatives were not implemented. No Action may be thought of as a continuation of current operations and trends in the study area for the next 29 years (to 2033) when the annual demand for TMWA's M&I water in the Truckee Meadows is projected to reach 119,000 acre-feet. No Action assumes that current surface water administrative policies would continue. Such policies include California's State Water Resources Control Board (SWRCB) moratorium or policy equivalent on processing pending water right applications that would exceed the interstate allocation as established in the draft Interstate Compact for the Lake Tahoe basin.

## A. Overview

Under No Action, Truckee River reservoir operations would remain unchanged from current operations (described in "Water Operations and Facilities") and would be consistent with existing court decrees, agreements, and regulations described in chapter 1 that currently govern surface water management (i.e., operating reservoirs and maintaining streamflows) in the Lake Tahoe and Truckee River basins. TMWA's existing programs for surface water rights acquisition and groundwater pumping for M&I use would continue. Groundwater pumping and water conservation in Truckee Meadows, however, would satisfy a greater proportion of projected future M&I demand than under current conditions. Groundwater pumping in California also would increase to satisfy a greater projected future M&I demand.

## B. Interstate Allocation

The apportionment of waters of Lake Tahoe and the Truckee River and Carson River basins conditionally approved by the Congress in section 204(b) and (c), respectively, of P.L. 101-618 would not become effective under No Action. Current surface water administrative policies would continue.

Meanwhile, California and Nevada may continue to honor, as far as possible, the allocations in the Interstate Compact (Compact), which are similar to the allocations in P.L. 101-618 (though not ratified by the Congress). It is assumed for purpose of the No Action analysis that current surface water administrative policies would continue, including SWRCB's moratorium in effect since 1972, on acting on pending water right applications in the Lake Tahoe basin that would exceed the Compact's allocation or subsequent policy equivalent.

It is also reasonable to assume that, because of projected community growth in the study area, some existing appropriative and riparian water rights not being fully used could be used more efficiently or that diversion amounts could be lawfully increased by 2033. When asked to identify a specific quantity for input to the operations model, CDWR estimated that an additional 300 acre-feet per year could be made available in the Truckee River basin in California under existing appropriative and riparian water rights.[5] For

[5] The upper Truckee River basin is defined as the Truckee River basin in California.

example, subject to the requirements of existing law, a water right permittee may build up diversions and use over time to the full amount authorized in the permit. This type of action, together with other lawful adjustments to diversions, is assumed to increase water diversions by 300 acre-feet by 2033, without granting any new water rights permits.

## C. Water Operations[6] and Facilities

### 1. Water Categories

No Action assumes that water would continue to be stored and managed as water categories identified in table 2.2, as under current operations.

### 2. Floriston Rates

The *Truckee River General Electric* and *Orr Ditch* Decrees would continue to be implemented as under current operations to maintain prescribed flows (known as Floriston Rates) in the Truckee River at the Farad gauge. Floriston Rates provide water to serve hydroelectric power generation, M&I, and agriculture water rights specified in the *Orr Ditch* Decree. The decrees also establish criteria for storing Floriston Rate Water in Lake Tahoe and Boca Reservoir and for later release to maintain Floriston Rates. These rates of flow are determined by the water surface elevation of Lake Tahoe and month as shown in table 2.3. Sufficient Floriston Rate Water is released to achieve such rates when unregulated flow (footnote 17 in chapter 1) is otherwise insufficient.

Water would continue to be diverted from the Truckee River in accordance with the *Orr Ditch* Decree. Floriston Rate Water and unregulated water in the river that is not required to satisfy the Pyramid Tribe's irrigation rights[7] or TMWA's right to continuously divert 40 cfs from the river, and not legally diverted by other senior water rights holders, could be diverted at the Truckee Canal for use on the Newlands Project, consistent with Operating Criteria and Procedures (OCAP). Remaining water in the Truckee River would flow to Pyramid Lake as Pyramid Tribe Appropriated Water. TMWA would continue to be allowed to divert any amount of water from the Truckee River during December, January, and February as needed to remove ice from the Highland Ditch (serves Chalk Bluff Water Treatment Facility in Reno).

If Floriston Rates could not be achieved for the entire April-September period, the Truckee River Basin Committee (signatory parties to the Truckee River Agreement [TRA]) could, by unanimous agreement, reduce Floriston Rates in order to extend the otherwise shortened water delivery season. Diversion of available water would be administered according to decreed priorities.

[6] "Water operations" means the management of categories of water stored in a reservoir or flowing in a river to meet specific objectives (e.g., serve water rights, achieve streamflows). Operations include such techniques as accumulating water in storage, exchanging water categories, and releasing water from storage.

[7] Claim Nos. 1 and 2 of the *Orr Ditch* Decree, which are the most senior rights on the river.

Table 2.2.—Water categories[1] and uses under No Action

| | |
|---|---|
| Project Water | Water stored in Lake Tahoe, Prosser Creek Reservoir, Stampede Reservoir, and Boca Reservoir pursuant to existing storage licenses or permits (e.g., Stampede Project Water) |
| Floriston Rate Water | Project Water stored in Lake Tahoe and Boca Reservoir pursuant to the *Orr Ditch* Decree, water exchanged under the Tahoe-Prosser Exchange Agreement (TPEA), and unregulated flow in the Truckee River are used to achieve Floriston Rates |
| Stampede Project Water | Project Water stored in Stampede Reservoir pursuant to the existing U.S. storage permit with SWRCB and released to benefit Pyramid Lake fishes[2] and to maintain minimum reservoir releases |
| Prosser Project Water | Project Water stored in Prosser Creek Reservoir pursuant to the existing U.S. storage permit with SWRCB, exchanged under TPEA, released to benefit of Pyramid Lake fishes and to maintain minimum reservoir releases |
| Newlands Project Temporary Storage | Water temporarily stored in Stampede Reservoir in accordance with the terms of Operating Criteria and Procedures (OCAP) for the Newlands Project (43 CFR 418.20) |
| Sierra Pacific Interim Storage | Private Water stored in Stampede and Boca Reservoirs in accordance with the Interim Storage Agreement[3] |
| Private Water | Water stored by TMWA in Independence Lake and Donner Lake, and by TCID in Donner Lake |
| TCID Private Water | Private Water stored pursuant to the water rights of TCID in Donner Lake for the benefit of TCID |
| TMWA Private Water | Private Water stored pursuant to the water rights of TMWA in Independence Lake and Donner Lake for M&I use in TMWA's service area (generally Truckee Meadows) |
| Tahoe-Prosser Exchange Water | Project Water stored in Prosser Creek Reservoir pursuant to the existing United States' storage license/permit with SWRCB and released pursuant to TPEA to make up for Floriston Rate Water previously released to maintain minimum releases from Lake Tahoe |
| Pyramid Tribe Appropriated Water | Water in the Truckee River not subject to vested and perfected rights as of 1984, that was appropriated by the Pyramid Tribe pursuant to Nevada State Engineer Ruling No. 4683 |
| Water Quality Water | Water associated with water rights acquired under the Truckee River Water Quality Settlement Agreement |

[1] To simplify the discussion, some water category names have been altered slightly to conform with terms used in the Draft Agreement, e.g., Private Water is referred to as Privately Owned Stored Water in the Draft Agreement.
[2] Cui-ui and Lahontan cutthroat trout are collectively referred to as Pyramid lake fishes.
[3] The Interim Storage Agreement terminates in about 14 years but may be renewed by the parties.

Table 2.3.—Prescribed Floriston Rates (cfs) at the Farad gauge are based on Lake Tahoe elevation in a given month

| Lake Tahoe elevation (Lake Tahoe datum[1]) | October | November-February | March | April-September |
|---|---|---|---|---|
| Below 6225.25 | 400 | 300 | 300 | 500 |
| 6225.25-6226.00 | 400 | 350 | 350 | 500 |
| Above 6226.00 | 400 | 400 | 500 | 500 |

[1] Lake Tahoe datum is an elevation reference point at Lake Tahoe Dam for measuring the elevation of Lake Tahoe. The point is assumed to be at an elevation of 6230.00 feet mean sea level.

### 3. Reservoir Operations

No Action assumes that all reservoirs would continue to accumulate[8] water designated for the storage categories identified in table 2.2.[9] The following priorities to accumulate water under No Action would be the same as under current operations. Except for the filling of Donner Lake (9,500 acre-feet) and the first 3,000 acre-feet of water accumulated in Independence Lake each year, all reservoirs in the Truckee River basin accumulate water so as not to interfere with maintaining Floriston Rates and in accordance with priorities and other terms of their respective storage licenses. When Floriston Rates are being achieved or exceeded, Lake Tahoe and Boca Reservoir are the first in priority to accumulate Project Water (up to full reservoir and 25,000 acre-feet, respectively). When diversions at Derby Diversion Dam for the Newlands Project are not required to satisfy OCAP targets, Project Water can be accumulated in the remaining space of Boca Reservoir (15,850 acre-feet), followed by the remaining space of Independence Lake (14,500 acre-feet), then Stampede Reservoir (126,000 acre-feet) and finally Prosser Creek Reservoir (30,000 acre-feet).[10] Martis Creek Reservoir (20,400 acre-feet) only temporarily accumulates water according to U.S. Army Corp of Engineers (COE) flood control requirements.

#### *a. Accumulation, Storage, and Release*

##### *i. Lake Tahoe and Boca Reservoir*

Lake Tahoe and Boca Reservoir operations would continue as under current operations to be coordinated to maintain Floriston Rates, in accordance with TRA. Therefore, the following operations would continue to be practiced. Floriston Rate Water would be released from these reservoirs as available when unregulated flow in the basin is insufficient to maintain Floriston Rates. Boca Reservoir would be the primary source of stored water for maintaining Floriston Rates when Lake Tahoe is above 6,225.5 feet from April through October, at which time releases from Lake Tahoe would be reduced to achieve only minimum streamflows to the extent Floriston Rate Water can be stored in Prosser Creek Reservoir. (See "Minimum Reservoir Releases.") Lake Tahoe would be the primary source to support Floriston Rates from April through October when its elevation is equal to or below 6,225.5 feet. From November through March, Boca Reservoir would generally provide water for Floriston Rate Water, though Lake Tahoe is frequently a major contributor.

[8] To simplify the revised DEIS/EIR presentation, the term "accumulate" means to create and increase storage of a water category in a reservoir. In the Draft Agreement, however, "accumulation," "impoundment," and "establishment" are defined terms that relate separately to different water categories and operations.

[9] This does not include Pyramid Tribe Appropriated Water, which may not be accumulated under No Action in a Truckee River reservoir.

[10] Prosser Creek Reservoir capacity is 29,800 acre-feet; SWRCB license is 30,000 acre-feet.

### *ii. Donner Lake*

TMWA and TCID own the rights to the storage space in Donner Lake as tenants in common. Under No Action, as under current operations, TMWA would continue to manage its half (TMWA Private Water) for M&I use in Truckee Meadows and for power generation at Sierra Pacific's four hydroelectric plants along the Truckee River. TCID would continue to manage its half (TCID Private Water) to serve irrigation rights on the Newlands Project when OCAP would allow diversions from the Truckee River. Other than when required by its respective owners in the fall, stored water must be released for dam safety purposes. Water released for dam safety purposes may then be used to achieve Floriston Rates.

Donner Lake is currently, and would continue to be under No Action, operated according to the 1943 Donner Lake Indenture, which requires that the dam be operated to prevent the lake from exceeding elevation 5935.8 feet, and prohibits water from being released (other than minimum releases for streamflow purposes) during June, July, or August when lake elevation is less than 5932.0 feet. Water rights of the Donner Lake Water Company and its successors reserved by the 1943 Indenture are quantified and made applicable to specified lands in the Donner Lake basin by an agreement dated April 27, 1998, among TMWA, TCID, and the Donner Lake Water Company under which up to 990 acre-feet per year may be used for domestic and commercial uses on the specified lands. Dam safety requirements specify that the discharge gates of the dam be held open from November 15 through April 15 to prevent the water surface from exceeding elevation 5926.9 feet. During droughts, California may allow the gates to remain closed longer in the fall and to be closed earlier in the spring.

### *iii. Prosser Creek Reservoir*

United States and the Pyramid Tribe would continue to manage Prosser Project Water as under current operations and the following operations would continue. Once Floriston Rates, OCAP diversion allowance, and storage targets for other reservoirs have been satisfied, the United States may accumulate up to 30,000 acre-feet in Prosser Creek Reservoir after April 10. Prosser Creek Project Water is first used to satisfy provisions of TPEA. (See "Minimum Reservoir Releases.") Such Tahoe-Prosser Exchange Water may be carried over in storage from one year to the next (up to the winter maximum of 9,800 acre-feet), but usually is released during the year in which it was accumulated. The U.S. Fish and Wildlife Service (FWS) and the Pyramid Tribe would continue to jointly manage Prosser Project Water stored in excess of that needed for TPEA, in coordination with Stampede Project Water operations, for the benefit of Pyramid Lake fishes. For later exchanges under TPEA, however, Prosser Project Water is reserved to fill the 9,800 acre-feet of carryover space not occupied by Tahoe-Prosser Exchange Water; in essence, this creates a maximum annual release of about 20,000 acre-feet.

### *iv. Independence Lake*

TMWA, which owns rights to the reservoir portion of Independence Lake, would continue to accumulate and release TMWA Private Water for M&I use in Truckee Meadows.

The Interim Storage Agreement (chapter 1, "History of Reservoir and River Operations") allows TMWA Private Water in Independence and Donner Lakes to be re-stored in Stampede and Boca Reservoirs as TMWA Interim Storage. Each year, any TMWA Interim Storage in excess of 5,000 acre-feet on September 1 is converted to Stampede Project Water. In addition, when storage in Independence Lake is forecast to be below 7,500 acre-feet during the summer, California may direct TMWA to provide and maintain a fish channel through the Independence Creek delta.

### *v. Stampede Reservoir*

Once Floriston Rates, OCAP diversion allowance, and storage targets for all reservoirs, except Prosser Creek Reservoir, are met, the United States may accumulate up to 126,000 acre-feet in Stampede Reservoir annually. FWS and the Pyramid Tribe would continue to jointly manage Stampede Project Water consistent with the U.S. district court's opinion in *Carson-Truckee Water Conservancy District, et al.* v. *Watt*, 1982. As under current operations, if the runoff forecast indicates that unregulated flow in the lower Truckee River[11] is not likely to be sufficient for the management objective for Pyramid Lake fishes, FWS and the Pyramid Tribe could release Stampede Project Water to supplement lower Truckee River flow. Therefore, once released, Stampede Project Water could not be diverted from the river, other than temporarily for generating electricity at Sierra Pacific's Truckee River hydroelectric plants, and could not be used to achieve Floriston Rates. Management objectives vary from year to year depending on forecasted runoff, the amount of Stampede and Prosser Creek Project Waters in storage, and the management objectives for Pyramid Lake fishes (chapter 3). These Project Waters may also be released to benefit riparian habitat along the lower Truckee River, which would indirectly benefit Pyramid Lake fishes.

In addition to TMWA Interim Storage, Water Quality Water (chapter 1, "History of Reservoir and River Operations") could be stored in Stampede Reservoir, as under current operations and assuming compliance with SWRCB permits, licenses, and applicable California law. Such storage could be accomplished by exchanging Water Quality Water flowing in the lower Truckee River for an equal amount of Stampede Project Water or Prosser Project Water scheduled to be released. As with Project Waters, once Water Quality Water is released, it could not be diverted from the river, other than temporarily for generating electricity at Sierra Pacific's Truckee River hydroelectric plants, and could not be used to achieve Floriston Rates.

Newlands Project Temporary Storage is water stored in Stampede Reservoir that otherwise would be diverted to Lahontan Reservoir at Derby Diversion Dam in accordance with

[11] The lower Truckee River is that reach of the Truckee River downstream from Derby Diversion Dam to Pyramid Lake.

OCAP in exchange for Stampede Project Water that would be scheduled to be released to flow to Pyramid Lake. Newlands Project Temporary Storage could be accumulated each year in Stampede Reservoir during November through June. It could be released, consistent with OCAP, for use in the Carson Division of the Newlands Project from July 1 through the end of the irrigation season (usually November 15). Any Newlands Project Temporary Storage remaining in Stampede Reservoir at the end of the irrigation season would convert to water dedicated to the conservation of Pyramid Lake fishes.

#### *vi. Martis Creek Reservoir*

COE would continue to use the 20,400-acre-foot capacity of the reservoir for temporary flood control. Because no long-term storage is permitted, no minimum release is required to maintain streamflow.

#### *vii. Lahontan Reservoir*

TCID would continue to operate Lahontan Reservoir in accordance with OCAP. Lahontan Reservoir receives inflow primarily from the Carson River, supplemented by the Truckee River via the Truckee Canal, when Lahontan Reservoir storage is forecast to be below the monthly target set by OCAP.

### ***b. Recreational Pools***

As under current operations, no recreational pools would be maintained in the Federal reservoirs or Independence Lake under No Action. The 1943 Donner Lake Indenture would continue to require a recreational pool for Donner Lake.

### ***c. Minimum Fish Pools***

As under current operations, no minimum reservoir pools to protect fish populations would be required under No Action.

### ***d. Minimum Reservoir Releases***

Minimum releases from all reservoirs would be the same under No Action as under current operations (table 2.4) and would be maintained (to the extent water is available, except for Lake Tahoe) even if the water could not be re-stored or used for its intended purpose.

Table 2.4.—Minimum reservoir releases (cfs)

| | |
|---|---|
| Lake Tahoe<br>– October through March<br>– April through September | <br>50<br>70 |
| Donner Lake | 2-3 |
| Prosser Creek Reservoir | 0-5 |
| Independence Lake | 2 |
| Stampede Reservoir | 30 |
| Boca Reservoir | none |

*i. Lake Tahoe*

As under current conditions, TPEA (chapter 1, "History of Reservoir and River Operations") would be applicable under No Action for maintaining minimum releases from Lake Tahoe when no releases would otherwise have been made. TPEA allows water to be released from Lake Tahoe for the benefit of fish resources immediately downstream in exchange for an equivalent amount of water in Prosser Creek Reservoir that is reserved to maintain Floriston Rates. From April 1 through September 30, the minimum release from Lake Tahoe is 70 cfs; otherwise, it is 50 cfs. These releases are made only if there is sufficient water accumulated in Prosser Creek Reservoir for the exchange (or if Prosser Creek inflow is simultaneously converted or stored as the exchange occurs). Tahoe-Prosser Exchange Water is released later in lieu of releases from Lake Tahoe or Boca Reservoir to maintain Floriston Rates. Because storage of exchange water may not interfere with COE flood storage space requirement for Prosser Creek Reservoir, the Federal Water Master strives to release all exchange water before November 1. As under current operations, the Federal Water Master may vary the release of Floriston Rate Water from Lake Tahoe and Boca Reservoir in order to avoid a TPEA exchange.

*ii. Donner Lake*

As under current operations, the minimum release from Donner Lake for the benefit of fish resources would be 2 cfs when the flow immediately downstream from the confluence with Cold Creek is 5 cfs or more; otherwise, the minimum release would be 3 cfs. Because the gates of the dam must be held open from November 15 through April 15, lake level determines the outflow for that period; thus, flow could be less than the 2 or 3 cfs otherwise required.

*iii. Prosser Creek Reservoir*

A minimum release of 5 cfs, or inflow to the reservoir, whichever is less, would be required, as under current operations. If pass-through water or release of exchange water were not sufficient, then Prosser Creek Project Water would be released to Pyramid Lake.

*iv. Independence Lake*

A minimum release of 2 cfs would be maintained, as under current operations.

*v. Sierra Valley Diversion Structure*

The minimum bypass flow[12] at the Sierra Valley diversion structure on the Little Truckee River is 5 cfs from March 15 through June 15, and 3 cfs from June 16 through September 30. No diversions are made from October 1 through March 14.

[12] "Bypass flow" is water that is not diverted at a structure but is allowed to flow downstream.

*vi. Stampede Reservoir*

United States, through an informal agreement with CDFG, would maintain a minimum release of 30 cfs from Stampede Reservoir for the benefit of fish and wildlife in the Little Truckee River.[13] Any Stampede Project Water released for minimum flow and not required in the lower Truckee River would be re-stored in Boca Reservoir for later release or exchanged back to Stampede Reservoir by capturing in Stampede Reservoir an equivalent amount of water which could otherwise be accumulated in Boca Reservoir.

*vii. Boca Reservoir*

No minimum release would be required from Boca Reservoir.

*viii. Martis Creek Reservoir*

No minimum release would be required from Martis Creek Reservoir.

### *e. Flood Control Operations*

As under current operations, Prosser Creek, Stampede, Boca, and Martis Creek Reservoirs would be operated in accordance with existing COE flood control regulations, which attempt to limit Truckee River flow to a maximum of 6,000 cfs through Reno. While not part of the COE flood control plan, under No Action, Lake Tahoe would continue to be operated to conform to this restriction as long as such operation did not cause the lake elevation to exceed 6229.1 feet.

As under current operations, Prosser Creek Reservoir would be managed to provide 20,000 acre-feet of flood space from November 1 to at least April 10 of the following year. If the forecasted runoff is greater than that prescribed in the Flood Control Manual for the Truckee River (COE, 1985), then flood space must be held vacant for a longer period. Stampede and Boca Reservoirs would continue to provide a combined 30,000 acre-feet of flood space with similar restrictions as described for Prosser Creek Reservoir. Martis Creek Reservoir would continue to provide 20,000 acre-feet of flood space.

### *f. Spills and Precautionary Releases*

As under current operations, water could be released to prevent or reduce the magnitude of a spill (called a precautionary release). Project Water would be the last category of stored water to spill or be released for precautionary purposes.

[13] This 30 cfs minimum release, while being honored under current operations, is more than twice the minimum required by the SWRCB Stampede Reservoir license.

#### *g. Reservoir Pumping*

As under current operations, water could be pumped (or siphoned) from Lake Tahoe and Independence Lake under certain conditions. According to TRA, Lake Tahoe could only be pumped or siphoned for hydroelectric power generation or irrigation if agreed to by the Secretary, and for "sanitary or domestic uses" if agreed to by California and Nevada.

TMWA could only pump water from Independence Lake after obtaining the necessary permits from California. These actions would be required to comply with applicable Federal and California laws (e.g., NEPA and CEQA).

#### *h. Emergencies*

As under current operations, Federal, State, or local governmental agencies would respond to emergencies involving their water management facilities or water resources. Also, the Federal Water Master would continue to be authorized to take actions necessary to respond to an emergency.

### 4. Truckee River Hydroelectric Plants

Dams associated with Sierra Pacific's four hydroelectric plants (Farad, Fleish, Verdi, and Washoe) located along the Truckee River between the confluence of the Little Truckee River and Reno[14] would continue to be used to divert water into flumes for conveyance to hydroelectric plants, where the water would be either passed through turbines or overflow into spillways before returning to the river. Sierra Pacific has *Orr Ditch* Decree rights to divert sufficient water from the Truckee River to provide from 327 cfs to 400 cfs at these plants[15] to generate hydroelectric power.

The minimum bypass flow for the Farad diversion dam would continue to be 150 cfs or the flow of the Truckee River immediately upstream of the diversion, whichever is less.[16] While there would continue to be no mandatory minimum bypass flow at the diversion dams for Fleish, Verdi, and Washoe hydroelectric plants, an informal agreement between Sierra Pacific and FWS would continue to maintain a minimum flow of 50 cfs over each dam.

### 5. Water Exportation from Little Truckee River to Sierra Valley

Under No Action, about 7,000 acre-feet would continue to be exported annually from the Little Truckee River for irrigation in Sierra Valley (Feather River Basin) under the Sierra Valley Decree.

[14] Farad diversion dam was washed out during the January 1997 flood and has not yet been replaced.

[15] Sierra Pacific advises that it must divert 425 to 450 cfs to meet decreed flows at the individual plants.

[16] Required by term and condition No. 12 of SWRCB's 401 Certification for the Farad Diversion Dam Replacement Project proposed by Sierra Pacific (2003).

## 6. Municipal and Industrial Water Resources[17]

### *a. TMWA*

To meet the 2003 projected annual M&I demand of 119,000 acre-feet in TMWA's service area under No Action, TMWA plans to continue to exercise its existing water rights and expand its present conservation and acquisition programs.

#### *i. Exercise of Existing Water Rights*

TMWA plans to continue to exercise its rights (1) under TRA to divert up to 40 cfs from the Truckee River, (2) to the surface flows of Hunter Creek, (3) to existing irrigation water that has been converted to M&I use, and (4) to private storage in Independence Lake and Donner Lakes, including TMWA Interim Storage in Stampede and Boca Reservoirs.

#### *ii. Transfer of Irrigation Water Rights to Municipal and Industrial Use*

TMWA anticipates that, under No Action, developers in Truckee Meadows would continue the current practice of dedicating water rights for new service commitments. As is the current practice, dedicated water rights would be obtained from existing *Orr Ditch* Decree irrigation water rights in the Truckee Meadows, Verdi, Spanish Springs, and Tracy areas. In the past as a drought protection measure, TMWA required developers to dedicate more water rights than necessary to serve new commitments during normal water years.[18] TMWA, however, anticipates that, under No Action, developers would not be required to dedicate additional water rights. Currently, TMWA has accumulated 57,170 acre-feet of former irrigation water rights. Under No Action, TMWA anticipates that developers would provide an additional 25,860 acre-feet by 2033.

#### *iii. Pumping Truckee Meadows Groundwater*

Under No Action, TMWA is expected to use the Nevada State Engineer's Groundwater Management Order 1161, dated May 16, 2000, (attachment E) to increase its pumping of groundwater from Truckee Meadows during dry water years[19] in exchange for reduced pumping during normal water years. As a consequence, TMWA would pump less than its entitlement during normal water years in order to be allowed to pump more during dry water years. Therefore, TMWA would pump about 12,570 acre-feet during normal water years, though entitled to pump 15,950 acre-feet, and up to 22,000 acre-feet during dry

[17] Usage assumptions and water resources, in addition to those given in this section, are described in chapter 3, "General Methods and Assumptions" and "Water Resources."

[18] A normal water year would exist when the April 15 forecast for the Truckee River indicates there would be sufficient unregulated flow and Floriston Rate Water storage to maintain Floriston Rates through the water year (October through September).

[19] A dry water year would exist when the April 15 forecast for the Truckee River indicates there would not be sufficient unregulated flow and Floriston Rate Water storage to maintain Floriston Rates through the water year (October through September).

water years. It is assumed that any new production wells would be drilled in the aquifer addressed in Groundwater Management Order 1161.

#### *iv. Water Conservation*

TMWA plans to use water saved through the residential water meter retrofit program and M&I conservation practices to serve existing and new water customers. TMWA contends that chapter 617 of the 1989 Statutes of Nevada, which prohibits water conserved by retrofitting residences with water meters from being served to water customers during normal water years, does not apply to it.

In addition to the current conservation program (with the objective to reduce annual demand by 10 percent), TMWA anticipates that more conservation measures would be implemented during dry water years under No Action so as to reduce annual demand by an additional 9 percent.

### ***b. City of Fernley***

To meet its M&I demand under No Action, Fernley plans to continue to exercise existing surface water rights (about 4,000 acre-feet) and to pump groundwater from the local aquifer, along with an additional 10,000 acre-feet of surface water rights acquired through its existing acquisition program. Because of competition between the Truckee River Water Quality Settlement Agreement (WQSA) and Fernley's M&I acquisition program, the No Action analysis for this study estimated that Fernley would acquire only an additional 2,800 acre-feet and the WQSA would acquire the remaining 10,300 acre-feet of surface water rights in the Truckee Division of the Newlands Project. (See chapter 3, "Water Resources," for more details.)

### ***c. Lake Tahoe Basin in Nevada***

Under No Action, surface water would continue to be diverted from tributaries entering Lake Tahoe and pumped from Lake Tahoe and local aquifers to provide a combined annual supply of up to 11,000 acre-feet of water for M&I demand in the Lake Tahoe basin in Nevada.

### ***d. Truckee River and Lake Tahoe Basins in California***

California anticipates that the annual demand for water (both surface and ground) in the Truckee River and Lake Tahoe basins in California by 2033 under No Action would be 22,700 acre-feet and 23,000 acre-feet, respectively (table 2.5). The State also estimates that surface water usage in California's Truckee River basin likely would increase by 300 acre-feet (for recreational or other purposes), while annual groundwater pumping in the basin likely would increase from the current 7,570 acre-feet up to 19,600 acre-feet to serve all other uses. In addition, annual water usage in the Lake Tahoe basin likely would increase from the current annual usage of 18,700 acre-feet to 23,000 acre-feet.

Table 2.5.—Water usage (acre-feet per year)
Truckee River and Lake Tahoe basins in California

| | No Action | LWSA | TROA |
|---|---|---|---|
| Truckee River basin | | | |
| Surface water | 3,100 | 4,300 | 4,300 |
| Groundwater | 19,600 | 18,400 | 18,400 |
| Total | 22,700 | 22,700 | 22,700 |
| Lake Tahoe basin | 23,000 | 23,000 | 23,000 |

### 7. Administration, Accounting and Scheduling

The Federal Water Master appointed by the *Orr Ditch* Court would continue to oversee and coordinate reservoir operations and the delivery of water to serve *Orr Ditch* Decree water rights, maintain a water accounting system, and issue periodic reports of hydrologic data measurements.

# III. LWSA

LWSA is an action alternative similar to No Action but with water supply options that may be authorized by State and local government agencies. LWSA describes a probable water management approach in the Truckee River basin if TROA were not implemented. It may be thought of as a continuation of current trends in the study area for the next 29 years (to 2033), when the annual demand for TMWA's M&I water in the Truckee Meadows is projected to reach 119,000 acre-feet. It assumes that surface water management operations and storage facilities would be the same as described under No Action, but that groundwater pumping and M&I water conservation in Truckee Meadows and the Truckee River basin in California would differ. It also assumes that local water authorities would obtain the necessary authorizations to implement various strategies and actions to meet projected demands if TROA were not implemented.

For California, LWSA assumes action by SWRCB to approve some pending applications to appropriate surface water, allowing, by 2033, an estimated 1,200 acre-feet per year of surface water to be used in lieu of groundwater otherwise used in the Truckee River basin in California. Total water use, however, is anticipated to be the same as under No Action.

## A. Overview

The following would be the same under LWSA as under No Action:

- All elements of Truckee River reservoir operations
- River flow management
- Truckee River hydroelectric plant operations
- Minimum reservoir releases
- Reservoir spill and precautionary release criteria

- Water exportation from the Lake Tahoe and upper Truckee River basins

The principal differences between No Action and LWSA would be the source of water used for M&I purposes, extent of water conservation, implementation of a groundwater recharge program in Truckee Meadows, and assumptions regarding governmental approval of new water supply proposals.

## B. Interstate Allocation

As under No Action, the apportionment of the waters of Lake Tahoe, the Truckee River basin, and the Carson River basin agreed upon by California and Nevada, and conditionally approved by Congress in section 204 of P.L. 101-618, would not become effective. According to CDWR (attachment D), it is assumed for purposes of LWSA that SWRCB would lift its moratorium and begin processing and approving some pending applications to appropriate surface water. LWSA assumes that by 2033, this process would allow an estimated 1,200 acre-feet per year of surface water to replace groundwater otherwise used in the Truckee River basin in California. Total water use, however, is anticipated to remain the same as under No Action.

## C. Water Operations and Facilities

### 1. Water Categories

Storage and management of water categories would be the same under LWSA as under No Action.

### 2. Floriston Rates

Floriston Rate operations would be the same under LWSA as under No Action.

### 3. Reservoir Operations

Reservoir operations would be the same under LWSA as under No Action.

### 4. Truckee River Hydroelectric Plants

Operation of Sierra Pacific's four Truckee River hydroelectric plants would be the same as under No Action.

### 5. Water Exportation from Little Truckee River to Sierra Valley

Water exportations from the Little Truckee River to Sierra Valley would be the same as under No Action.

### 6. Municipal and Industrial Water Resources

#### *a. TMWA*

To meet a projected annual M&I demand of 119,000 acre-feet in Truckee Meadows by 2033 under LWSA, TMWA would continue to exercise its existing water rights and expand its conservation and acquisition programs.

##### *i Exercise of Existing Water Rights*

Existing water rights would be exercised as they are under No Action.

##### *ii. Transfer of Irrigation Water Rights to Municipal and Irrigation Use*

Irrigation water rights would continue to be transferred to TMWA for new M&I water service as under No Action. TMWA anticipates that, through the dedication program, developers would provide an additional 25,860 acre-feet by 2033.

##### *iii. Pumping Truckee Meadows Groundwater*

Under LWSA, TMWA expects to pump about 4,500 acre-feet more groundwater during dry water years than under No Action. This additional withdrawal would be possible because TMWA would use injection wells to recharge the Truckee Meadows aquifer during normal water years with about 1,000 acre-feet of water from the Truckee River. It is assumed that new production and injection wells would be drilled in the aquifer as addressed by Groundwater Management Order 1161.

##### *iv. Water Conservation*

As under No Action, TMWA plans to use water saved by the residential water meter retrofit program and M&I conservation practices to serve existing and new water customers during normal and dry water years. The Truckee Meadows M&I conservation program would continue under LWSA and is anticipated to reduce annual M&I use by about 10 percent. In addition to this savings, TMWA anticipates that an additional usage reduction of 4.7 percent would be required during dry water years. Less M&I conservation would be needed during dry water years under LWSA than under No Action because of the groundwater recharge program described under "Pumping Truckee Meadows Groundwater."

#### *b. City of Fernley*

The same amount of surface water and groundwater would be used to serve M&I demand in the vicinity of Fernley under LWSA as under No Action.

#### *c. Lake Tahoe Basin in Nevada*

As under No Action, surface water would continue to be diverted from tributaries entering Lake Tahoe and pumped from Lake Tahoe and local aquifers to serve M&I demand in the Lake Tahoe basin in Nevada.

#### *d. Lake Tahoe and Truckee River Basins in California*

California anticipates that the annual demand for water (both surface and ground) in the Lake Tahoe and Truckee River basins in California by 2033 under LWSA would be the same as under No Action, except that the water sources in the Truckee River basin in California (table 2.5) would differ from those under No Action. Annual usage of upper Truckee River basin surface water rights likely would increase from the current usage of 2,800 acre-feet to 4,300 acre-feet, while annual groundwater pumping in the basin likely would increase from the current 7,570 acre-feet to 18,400 acre-feet (1,200 acre-feet less than under No Action). As under No Action, annual water usage in the Lake Tahoe basin in California likely would increase from the current usage of 18,700 acre-feet to 23,000 acre-feet.

### 7. Administration, Accounting, and Scheduling

Administration, accounting, and scheduling would be the same as under No Action.

# IV. TROA

TROA describes operation of all reservoirs and associated water management if the Draft Agreement were implemented. This section includes the following:

- Overview of TROA
- Description of the interstate allocation
- Description of water and facility operations under TROA
- Description of change petitions and water rights applications requiring SWRCB approval

The complete text of the Draft Agreement is presented as an appendix.

## A. Overview

Implementation of TROA would modify operations of all Truckee River reservoirs to enhance coordination and flexibility while ensuring that existing water rights are served and flood control and dam safety requirements are met. TROA would incorporate, modify, or replace certain provisions of TRA and TPEA. TROA would supersede all

requirements of any agreements concerning the operation of all reservoirs, including those of TRA and TPEA, and would become the sole operating agreement for all reservoirs.[20]

All reservoirs would generally continue to be operated under TROA for the same purposes as under current operations[21] (table 2.2) and with most of the same Project Water storage priorities as under No Action and LWSA. TROA is prohibited by P.L. 101-618 from adversely affecting *Orr Ditch* Decree water rights. Table 2.6 lists the principal elements of TROA that differ from No Action and LWSA. These elements are intended to: (1) enhance water management flexibility, water quality, conditions for Pyramid Lake fishes, reservoir recreational opportunities, and reservoir efficiency; (2) increase M&I drought supply, minimum reservoir releases, and the capacity for carryover storage; (3) allocate Truckee River water between California and Nevada; and (4) decrease water use conflicts as compared to No Action and LWSA.

The primary difference between TROA and the other alternatives is that TROA would create opportunities for storing and managing categories of Credit Water. (See "Water Operations and Facilities," table 2.7.) Signatories to the Agreement generally would be allowed to accumulate Credit Water in reservoir storage by retaining or capturing water that otherwise would have been released from storage or passed through the reservoir to serve a downstream water right (e.g., reduction in the release of water necessary to achieve Floriston Rates). Such storage could only take place after a transfer in accordance with State water law. Once accumulated, Credit Water would be classified by category with a record kept of its storage, exchange, and release. Credit Water would be retained in storage or exchanged among the reservoirs until needed to satisfy its beneficial use. The Interim Storage Agreement would be superseded by new storage agreements between BOR and TROA signatories.

TROA would provide procedures for facilitating and encouraging coordination of scheduled water releases and exchanges among the reservoirs. A scheduled release from one reservoir could be substituted for a release from another reservoir, and the respective water accounts in each reservoir would be credited and debited as appropriate. In these ways, existing water rights and storage rights would be served while streamflows and recreational pools could be enhanced, the potential for spills or need for precautionary releases could be reduced, and reservoir storage space would be used more effectively.

[20] This sentence reflects the United States' proposed language as noted in section 5.A.1(a) of the Draft Agreement.

[21] Exceptions are that TMWA Interim Storage would not be stored because the Interim Storage Agreement would be terminated, and Newlands Project Temporary Storage would not be stored because of the creation of Newlands Project Credit Water (subject to future modification of OCAP).

Table 2.6.—Principal elements of TROA that differ from No Action and LWSA

- Allows TROA signatory parties to store water other than Project Water (i.e., Credit Water) in all reservoirs.
- Allows TROA signatory parties to exchange Credit Waters and Project Water among all reservoirs.
- Establishes rules and priorities for storing, managing, and spilling all categories of water.
- Requires coordinated scheduling of all reservoir operations.
- Provides for the implementation of the interstate allocation (section 204 of P.L. 101-618) between California and Nevada.
- Establishes criteria for acquiring water rights to meet a demand of up to, as well as beyond, 119,000 acre-feet within TMWA's service area.
- Establishes criteria for new wells in the Truckee River basin in California to minimize short-term reduction of streamflow.
- Expands minimum reservoir releases.
- Provides for Prosser Project Water and Stampede Project Water to be used for Pyramid Lake fishes even after the fishes are no longer listed under ESA.
- Allows full benefits of WQSA to be realized by allowing water acquired pursuant to WQSA to be stored in Truckee River reservoirs.
- Supports an application to SWRCB to increase Stampede Reservoir's California Water Right so that the full capacity of the reservoir (226,500 acre-feet) could be used in the event that such quantities of water are available.
- Supports an application to SWRCB to eliminate Prosser Creek Reservoir's maximum annual release requirement of 20,126 acre-feet of Prosser Project Water.
- Establishes more strict conditions and approval requirements for pumping or siphoning water from Lake Tahoe.
- Provides for the settlement of litigation.
- Establishes the Habitat Restoration Fund for the Truckee River.
- Provides for the termination of the Interim Storage Agreement.
- Encourages water managers to accommodate California Guidelines for streamflow and recreational pool targets.
- Creates the positions of Administrator (to oversee implementation of TROA) and Hearing Officer (to resolve disputes over administration of TROA).
- Identifies cost sharing among parties (for administering TROA).

TROA would also contain provisions (Article Six of the Draft Agreement) to implement various portions of the interstate allocation of Lake Tahoe and Truckee River waters between Nevada and California (section 204 of P.L. 101-618). In addition, signatory parties would support State of Nevada Permit Nos. 48061 and 48494 that allocate the remaining unappropriated waters of the Truckee River for Pyramid Lake, and recognition by the *Orr Ditch* Court that the Truckee River and its tributaries in Nevada would be fully appropriated.

The position of Administrator would be created to oversee implementation of the Agreement. The Federal Water Master would continue to have the authority to enforce *Orr Ditch* Decree water rights. Although the Draft Agreement is written to protect the exercise of vested or perfected water rights, if operations inadvertently reduced the delivery amount of the water a person was legally entitled to receive, the Administrator would be empowered to take any actions necessary to avoid or replace the reduction the water.

The Draft Agreement also contains provisions to resolve any disputes which may arise among the parties over the administration of TROA. TROA would provide for a Truckee River Special Hearing Officer to decide such disputes. Decisions of the Hearing Officer could be reviewed by petition to the *Orr Ditch* court, the U.S. district court in Reno with continuing jurisdiction over the *Orr Ditch* Decree.

United States, as plaintiff in the original *Orr Ditch* case, and the Pyramid Tribe, because of its intervention in that case for all purposes, are subject to the jurisdiction of the *Orr Ditch* court. Nevada, because of its intervention in the *Orr Ditch* case for all purposes, is subject to the court's jurisdiction. California would agree in TROA to be subject to the jurisdiction of the *Orr Ditch* court for certain limited purposes relating to TROA.

Nothing in TROA is intended to alter other applicable Federal or State laws, including laws or procedures applicable to the water conditionally allocated to the States by P.L. 101-618, and dam safety or flood control. TROA is not intended to abrogate or expand the jurisdiction of SWRCB or the Nevada State Engineer. In addition, TROA would not affect the operation of the Carson River or the power of the U.S. District Court for the District of Nevada (or its Federal Water Master) under the *Alpine* Decree.

## B. Interstate Allocation

TROA differs from No Action and LWSA in that certain Congressional actions would go into effect when TROA becomes effective: (1) allocations of Lake Tahoe and Truckee River waters between Nevada and California and (2) the confirmation of the *Alpine* Decree as part of the interstate allocation for the Carson River basin as conditionally approved by the Congress in section 204 of P.L. 101-618. TROA would not allocate these waters between the States, but would provide an operational basis for serving Truckee River water rights consistent with such allocation. This surface water allocation would be in addition to water currently exported from Lake Tahoe and Truckee River

basins (in California), including that decreed to Sierra Valley Water Company. Surface water available for diversion in California but remaining in the river would be available for diversion in Nevada.

According to CDWR (attachment D), it is assumed for purposes of this analysis, as with LWSA, that SWRCB would lift its moratorium and begin processing pending water rights applications and approving some applications to appropriate surface water, allowing, by 2033, an estimated 1,200 acre-feet per year of surface water to replace groundwater otherwise used in the Truckee River basin in California. However, total water use is anticipated to remain the same as under No Action.

### 1. Lake Tahoe Basin

#### *a. Diversions and Reuse*

Under TROA, Nevada and California could annually divert up to 11,000 acre-feet and 23,000 acre-feet, respectively, from combined surface water and groundwater sources in the Lake Tahoe basin for use in the basin. The interstate allocation would allow depletion (i.e., complete consumption with no return flow) of water within the Lake Tahoe basin without additional charge to either allocation, subject to existing law that currently requires export of all treated effluent from the Lake Tahoe basin.

#### *b. Snowmaking*

After 350 and 600 acre-feet of water have been used for snowmaking each year in the Lake Tahoe basin in Nevada and California, respectively, 16 percent of the additional water diverted and used in each State for snowmaking would be charged as a diversion against each State's allocation.

### 2. Truckee River Basin in California

Consistent with section 204 of P.L. 101-618, TROA would provide that California could divert no more than 32,000 acre-feet per year from the upper Truckee River basin, with a maximum of 10,000 acre-feet per year coming from surface water.[22] The State, however, could deplete no more than 17,600 acre-feet per year. Any new appropriations of surface water allocation in the Truckee River basin in California would be served according to the following priority:

(1) The Pyramid Tribe's Claim Nos. 1 and 2 of the *Orr Ditch* Decree.

(2) All California beneficial uses initiated before November 16, 1990.

(3) TMWA's 40 cfs right.

[22] Surface water diversions to Sierra Valley from the Little Truckee River would not be included in the 10,000 acre-foot limit.

(4) All California beneficial uses, except commercial irrigated agricultural, initiated on or after November 16, 1990.

(5) All Nevada beneficial uses, including streamflow for fish and inflow to Pyramid Lake.

(6) Commercial, irrigated agriculture in California initiated on or after November 16, 1990.

Surface water allocated to California from the upper Truckee River basin to generate hydroelectric power could only be used incidental to other releases.

#### *a. Snowmaking*

After 225 acre-feet of water have been used for snowmaking each year in the Truckee River basin, 16 percent of the additional water diverted and used for snowmaking would be charged as a diversion against California's allocation.

#### *b. Diversion to Use*

California could divert unregulated flow for beneficial use so long as its surface water allocation is not exceeded. For M&I purposes, California could also divert releases of some Credit Water categories and Project Water, as long as it compensates for such diversion by releasing a similar amount of California M&I Credit Water. Diversions using California water rights issued after May 1, 1996, could be no greater than 25 percent of the right within a month. Within the Donner Lake basin, in addition to the 990 acre-feet per year recognized in the April 29, 1998, agreement among TMWA, TCID, and Donner Lake Water Company, TROA would allow up to 40 acre-feet per year for small domestic registrations under California law. In the Independence Creek basin, TROA would allow up to 50 acre-feet of water per year for small domestic registrations that could be exercised adverse to TMWA's rights to Private Water under conditions specified in TROA.

#### *c. Surface Storage*

California could accumulate California M&I Credit Water in reservoirs for later use in the Truckee River basin, so long as such accumulation, together with its diversions to use, would not exceed its surface water allocation. Accumulation of California M&I Credit Water with California water rights issued after May 1, 1996, could be no greater than 25 percent of the annual entitlement within a month and could not take place if Floriston Rate water is insufficient to maintain Floriston Rates. The unused portion of California's surface water allocation could be used to accumulate Credit Water to serve environmental needs. (See "California Environmental Credit Water and Additional California Environmental Credit Water.")

California would retain the right to build or authorize construction of facilities in the upper Truckee River basin to store its surface water allocation. Accumulation in those facilities could not interfere with maintaining Floriston Rates or minimum reservoir releases. Using water rights issued after May 1, 1996, the total amount of water in new facilities at any one time could not exceed 10,500 acre-feet and such water could only be stored for M&I use or for the benefit of fish and wildlife. For new storage capacity in excess of 2,500 acre-feet, California's allowable storage of California M&I Credit Water and California Environmental Credit Water in all reservoirs would be reduced by an equal amount. These storage and usage limitations do not apply to the storage of the consumptive use portion of water rights issued in California on or before May 1, 1996, or to any Sierra Valley Decree water rights transferred to the Truckee River basin in California.

#### *d. Underground Storage*

Each year, California could authorize diversion of a portion of its surface water allocation to underground storage.

#### *e. Well Criteria*

The interstate allocation provisions of P.L. 101-618 provide that all new wells drilled in the Truckee River basin in California after November 16, 1990, be designed to minimize short-term reductions of surface streamflows to the maximum extent feasible (in accordance with section 204(c)(1)(B) of P.L. 101-618). TROA would include specific approval criteria for wells drilled after May 1, 1996. These criteria provide incentives to locate wells away from surface water sources. TROA would preclude any signatory party from challenging the construction of any water supply well under section 204(c)(1)(B) if the well: (1) was constructed prior to May 1, 1996; (2) served a single-family dwelling irrigating less than 1 acre of land; or (3) was in a special zone and met specific criteria for that special zone. Most special zone criteria in the Draft Agreement specify that wells be drilled: (1) at least 500 feet from the Truckee River, the Little Truckee River, and lakes or reservoirs located on these rivers; (2) at least 200 feet from perennial tributaries and lakes located on such tributaries; (3) at least 100 feet from any springs; and (4) at least 50 feet from ephemeral tributaries and lakes located on such tributaries. In zones overlying the Martis Valley Aquifer, the criteria would also specify casings down to 100 feet for wells located between 500 and 1,320 feet from the river. These criteria would supplement California standards for the design of water supply wells. TROA would provide for compliance with these requirements through notice and enforcement provisions. After TROA is implemented, notice would be required before most wells[23] could be constructed. Wells constructed during the interim period between May 1, 1996, and TROA implementation would have to comply with P.L. 101-618 and the notice and enforcement provisions in the Draft Agreement, unless specifically excluded through listing in TROA. (See section 10.B.1(e) of the Draft Agreement.) Wells may be included on this list by written request and approval of the mandatory signatory parties up until the agreement is signed.

[23] Certain wells are excluded from notice requirements, e.g., domestic wells and monitoring wells.

### 3. Carson River Basin in California

Confirmation of the interstate allocation of the Carson River basin (chapter 1) would not preclude the assertion of any additional water rights which could have been established prior to January 1, 1989, but which were not recognized in the *Alpine* Decree, so long as the total amount of any such additional allocations does not exceed 1,300 and 2,131 acre-feet per year by depletion for use in California and Nevada, respectively. TROA would not affect the operation of the Carson River under the *Alpine* Decree.

## C. Water Operations and Facilities

This section describes the water categories that would be created and managed under TROA, as well as Floriston Rate operations, reservoir operations, operation of Truckee River hydroelectric plant diversion dams, water exportation to Sierra Valley, M&I water resources for urban areas in California and Nevada, administration, and additional provisions unique to TROA.

### 1. Water Categories

In addition to the water categories listed in table 2.2, TROA would also provide for the new Credit Water categories listed in table 2.7. TROA would establish priorities for accumulating, exchanging, releasing, displacing,[24] and spilling all water categories. This priority system would increase the likelihood that certain waters in a reservoir would be available when needed, avoid adverse effects to *Orr Ditch* Decree water rights, improve minimum reservoir releases, and decrease the likelihood of adversely affecting Truckee River water quality.

TROA contains many provisions for (1) accumulating Credit Water in all reservoirs; (2) exchanging Credit Water among reservoirs; and (3) using and limiting the amount of Credit Water in storage.

#### *a. Accumulating Credit Water*

Credit Water could be accumulated in all reservoirs primarily by retaining Floriston Rate Water already in storage and by retaining inflow that would have otherwise been diverted downstream. It could also be accumulated by (1) trading water that has been released or is in storage for water that is stored in another reservoir or has been released; (2) converting water in storage from one category to another; and (3) with consent, using water rights of another party. Imported water and Private Water could also be used to accumulate Credit Waters. Credit Waters could be stored in any Truckee River reservoir without interfering with that reservoir's Project Water and generally would be retained until released or spilled.

[24] "Displacement" is an operation whereby a water category of higher storage priority causes one of lower storage priority in the same reservoir to be exchanged, released, or spilled to the extent that both categories cannot be simultaneously stored in the reservoir.

Table 2.7.—TROA Credit Water categories, water right ownership, and uses

| Category | Owner | Use |
|---|---|---|
| Additional California Environmental Credit Water | California | Non-consumptive, stream and riparian environmental uses |
| California Environmental Credit Water | California | Non-consumptive, stream and riparian environmental uses |
| California M&I Credit Water | California entities | M&I demand and groundwater recharge of aquifers in the Truckee River basin in California |
| Fernley Municipal Credit Water | Fernley | M&I, local aquifer recharge, re-vegetation of former agricultural lands, improve water quality in local wetlands, or enhance Pyramid Lake fish flows |
| Fish Credit Water | United States and Pyramid Tribe | Benefit cui-ui in lower Truckee River/Pyramid Lake and LCT in the Truckee River basin |
| Fish Water[1] | United States and Pyramid Tribe | Same as Stampede Project Water and Prosser Project Water in table 2.1 |
| Joint Program Fish Credit Water | United States and Pyramid Tribe | Managed by California to enhance streamflows in California and recreational pools in all reservoirs |
| Newlands Project Credit Water | United States | In conjunction with future modification of OCAP, used to refine diversions of Truckee River water to the Newlands Project |
| Other Credit Water | Any applicant | As may be proposed |
| TMWA Emergency Credit Water[2] | TMWA | M&I use in TMWA's service area during a drought or emergency |
| TMWA M&I Credit Water (Firm and Non-Firm) | TMWA | M&I use in TMWA's service area during a drought or emergency |
| Project Water in Another Reservoir | Original holder | Same use as the initial Project Water |
| Water Quality Credit Water | Reno, Sparks, Washoe County, United States and Pyramid Tribe | Improve Truckee River water quality by enhancing Truckee River flow downstream from Sparks, Nevada |

[1] Fish Water is not a Credit Water category, but is listed here because of its numerous interactions with Credit Waters.
[2] The term "Power Company Emergency Drought Supply" is used in the Draft Agreement.

### *b. Exchanging Credit Waters Among Reservoirs*

Water stored in any Federal or non-Federal reservoir could be exchanged with water stored in any other Federal or non-Federal reservoir within the Lake Tahoe and Truckee River basins. Also, a scheduled release from one reservoir could be substituted for a release from another reservoir; the respective water accounts in each reservoir would be credited and debited accordingly, and water would not be physically moved. Exchanges would be the main procedure for improving the availability of Credit Water, enhancing streamflows, reducing spill potential, and maintaining reservoir recreational pools.

### *c. Credit Water Accumulation, Storage, and Use Limitations*

Each Credit Water category would have specific accumulation, storage, and use limitations.

*i. California Environmental Credit Water and Additional California Environmental Credit Water*

California could accumulate up to 8,000 acre-feet of California Environmental Credit Water and 10,000 acre-feet of Additional California Environmental Credit Water with diversion rights acquired in California and Nevada or Sierra Valley Decreed water rights.

California could use these categories of Credit Water only to benefit non-consumptive stream and riparian environmental uses, not for recreational pools or to mitigate any adverse effects of TROA. Once released and not re-stored, water associated with water rights originating in California would be available for diversion in Nevada, while that from water rights in Nevada would flow to Pyramid Lake.

*ii. California M&I Credit Water*

California entities could use a portion of California's Truckee River surface water allocation to accumulate California M&I Credit Water, which could be released later to serve M&I demand and groundwater recharge in the upper Truckee River basin.

Once California M&I Credit Water is accumulated in Lake Tahoe (up to 8,000 acre-feet) it could be exchanged to other Federal reservoirs, to a maximum of 3,000 acre-feet. Water to serve the purposes of California M&I Credit Water could also be accumulated in any new facilities built in California in the future for that purpose, but storage for California M&I Credit Water in Federal reservoirs would be reduced by the amount of water that California accumulates in excess of 2,500 acre-feet in any new facilities. Accumulation would also have to comply with additional terms and conditions that SWRCB might establish.

*iii. Fernley Municipal Credit Water*[25]

If provided for in the final Agreement, the city of Fernley would use its changed diversion rights and privately owned water to accumulate Fernley Municipal Credit Water in Federal reservoirs. If a drought situation[26] does not exist by April 15, any Fernley Municipal Credit Water accumulated in excess of 10,000 acre-feet on April 1 of the same year would then be converted to Fish Credit Water. Storage of Fernley Municipal Credit Water would not be limited during a drought situation.

*iv. Fish Credit Water*

The United States and the Pyramid Tribe would only use this water for the benefit of cui-ui in the lower Truckee River/Pyramid Lake and LCT in the Truckee River basin.

[25] This Credit Water category is tentative, pending completion of negotiations.

[26] A drought situation would exist when the April 15 run-off forecast for the Truckee River indicates there would not be sufficient unregulated water and Floriston Rate Water to maintain Floriston Rates through the water year (October through September), or if the elevation of Floriston Rate Water in Lake Tahoe is forecast to drop below 6223.5 feet Lake Tahoe datum before November 15.

Fish Credit Water could be accumulated in four ways: (1) retention of water otherwise used only to satisfy Sierra Pacific's hydroelectric water rights; (2) capture of Pyramid Lake Appropriated Water; (3) conversion of Project Water or Credit Water already in storage; and (4) expansion of the Stampede Reservoir storage license to allow a maximum of 226,500 acre-feet to be captured annually in Stampede Reservoir.[27] An unlimited amount of Fish Credit Water could be accumulated.

*v. Joint Program Fish Credit Water*

A portion of Fish Credit Water (not to exceed 50 percent each year),[28] up to the amount of California's Truckee River surface water allocation that is not diverted, could be reserved as Joint Program Fish Credit Water. California would manage this Credit Water to enhance streamflows in California and recreational pools in Federal reservoirs. However, no more than 20,000 acre-feet of Joint Program Fish Credit Water could be stored in Federal reservoirs at any given time. Once released and not exchanged or re-stored, this water would flow unimpaired to Pyramid Lake.

*vi. Newlands Project Credit Water*

Newlands Project Credit Water under TROA would refine diversions from the Truckee River to the Newlands Project in conjunction with future modification of OCAP. Any time between October and July, a portion of Truckee River flow scheduled to be diverted to the Newlands Project could be accumulated as Newlands Project Credit Water by (1) exchanging with Fish Water and Fish Credit Water in storage for an equal amount of water that would then flow to Pyramid Lake or (2) retaining in storage a portion of a scheduled release or pass-through of water that would have otherwise been diverted at Derby Diversion Dam. Once stored, Newlands Project Credit Water required for diversion to the Newlands Project pursuant to OCAP would be released in time to be used for its authorized purposes (as much as possible before August 1). Newlands Project Credit Water not required for diversion to the Newlands Project would be reclassified to the water category it would have been at the time it was stored. This category would not be created until OCAP is modified for such purpose, at which time the category of Newlands Project Temporary Storage would be terminated.

*vii. Other Credit Water*

In anticipation of future requests to use any remaining storage space, TROA would provide for the category of Other Credit Water in all reservoirs.

[27] SWRCB must approve a modification of the Stampede Reservoir storage license to allow an additional 100,500 acre-feet of Project Water to be captured annually in Stampede Reservoir. Under the terms of TROA, however, this water would be Fish Credit Water.

[28] Excludes Fish Credit Water created through conversion of Credit Water or Project Water.

### *viii. TMWA M&I Credit Water*

TMWA could accumulate TMWA M&I Credit Water using the consumptive use portion of its *Orr Ditch* Decree water rights and TMWA Private Water not needed to meet the M&I demand in its service area.

#### (a) Firm and Non-Firm M&I Credit Water

TMWA M&I Credit Water would be classified as either Firm or Non-Firm. Firm M&I Credit Water could be stored only in Stampede Reservoir, while Non-Firm M&I Credit Water could be stored in any Truckee River reservoir. Compared to most categories of Credit Water, Firm M&I Credit Water would be a relatively secure supply because, among other things, it would have a higher priority to be stored in Stampede Reservoir than Fish Water. Non-Firm M&I Credit Water would be less secure than Firm M&I Credit Water because it could not interfere with storage or release of Project Water, except Fish Water under certain drought circumstances.

The amount of Firm and Non-Firm M&I Credit Water stored and carried over from one year to the next would be calculated based on M&I demand in TMWA's service area, the amount of water used in the Truckee River basin in California, and the existence of a drought situation. As M&I demand for Truckee River water in the Truckee Meadows increases and as California's M&I use increases, the carryover limit for Firm M&I Credit Water would increase from 2,000 acre-feet to 12,000 acre-feet, and the carryover limit for Non-Firm M&I Credit Water would increase from 4,000 acre-feet to 20,000 acre-feet. (See Appendices 7.A, 7.B, and 7.C in the Draft Agreement.) On April 15 of each year when a drought situation does not exist, all Non-Firm M&I Credit Water in excess of the April 1 carryover limit would be converted to Fish Credit Water. However, when a drought situation exists on April 15, TMWA could retain any Non-Firm M&I Credit Water already in storage to serve M&I demand until that drought situation ends, or until the following April 15, whichever is later.

TMWA M&I Credit Water would be stored until needed to supply the current M&I demand during a drought situation or converted to Fish Credit Water. In addition to the drought situation requirement, this water may only be used when TMWA's normal water supplies[29] are insufficient to meet the normal water year M&I demands, and TMWA has exhausted its Private Water in Donner Lake and water in excess of 7,500 acre-feet in Independence Lake. TMWA M&I Credit Water may be used without restriction during an emergency or repair situation.[30]

[29] TMWA's normal water supplies are the water sources that TMWA ordinarily uses in the absence of a drought to meet its customer M&I demands.

[30] "Emergency or repair situation" means any circumstance when scheduled alteration or repair of TMWA's water storage or delivery system prevents use of some of its normal water supplies to meet customer demand.

(b) TMWA Emergency Credit Water

TMWA could accumulate up to 7,500 acre-feet of TMWA Emergency Credit Water in Stampede Reservoir by either (1) re-storing Private Water in Stampede Reservoir; (2) accumulating water from changed diversion rights; or (3) converting Fish Credit Water accumulated in Stampede Reservoir. This category would not spill and not be required to be released for minimum streamflows. TMWA could release this water for M&I purposes during an emergency or repair situation or a drought situation after it had exhausted its normal water supplies and its TMWA M&I Credit Water and, to the extent permitted, pumped 5,000 acre-feet of water from Independence Lake. (See "Reservoir Pumping.")

(c) Toilet Replacement Water

Water conserved in Truckee Meadows through Washoe County's toilet replacement program would be accumulated (up to 4,000 acre-feet per year) and used as Non-Firm M&I Credit Water. When the storage of conserved water causes Non-Firm M&I Credit Water to exceed its carryover limit on April 1, the conserved water would be converted to Water Quality Credit Water.

*ix. Project Water in Another Reservoir*

In general, Project Water exchanged to another reservoir would be retained for its original purpose but would be classified as a Credit Water category with less security from spill or evaporation than most Credit Waters. Project Water in Another Reservoir is usually reclassified as Project Water when exchanged back to its reservoir of origin.

*x. Water Quality Credit Water*

Under TROA, Water Quality Water would be replaced by Water Quality Credit Water. This category of Credit Water could be stored in all reservoirs. As under the other alternatives, Reno, Sparks, Washoe County, United States, and the Pyramid Tribe would manage this water under TROA in accordance with WQSA.

**2. Floriston Rates**

Maintaining Floriston Rates to serve *Orr Ditch* Decree water rights would continue to be the foundation of Lake Tahoe and Boca Reservoir operations. However, TROA would allow flows associated with Floriston Rates to be reduced to create Credit Water. Parties to TROA holding *Orr Ditch* Decree water rights would be allowed to withhold releases of Floriston Rate Water that would otherwise have been subject to diversion from the Truckee River (or tributaries) to serve those water rights.

### 3. Reservoir Operations

Credit Water operations would not interfere with Project Water operations (except for water rights voluntarily relinquished), flood control operations, or dam safety requirements.

#### *a. Accumulation, Storage, and Release*

##### *i. Lake Tahoe and Boca Reservoir*

Except for Credit Water operations, including exchange of Floriston Rate Water, operation of Lake Tahoe and Boca Reservoir would be similar to that under No Action and LWSA.

##### *ii. Donner Lake*

Private Water in Donner Lake would continue to be stored and released under TROA as under No Action and LWSA. TROA would also allow TMWA Private Water in Donner Lake to be exchanged with Credit Waters from other reservoirs. California, with the approval of TCID, could also exchange Joint Program Fish Credit Water, California Environmental Credit Water, and Additional California Environmental Credit Water in other reservoirs with TCID Private Water in Donner Lake.

##### *iii. Prosser Creek Reservoir*

As under No Action and LWSA, Prosser Project Water would continue be dedicated first to TPEA and then to maintaining minimum releases from Prosser Creek Reservoir, with the remaining Project Water used for the benefit of Pyramid Lake fishes. Under TROA, however, the remaining Prosser Project Water could continue to be used for Pyramid Lake fishes even if the fish are no longer listed under the Endangered Species Act of 1973, as amended (ESA). TROA would also allow the United States to apply to SWRCB to eliminate the 20,162 acre-foot per year limit on releases from Prosser Creek Reservoir, though the minimum pool requirement would remain in effect. (See "Minimum Fish Pools.") BOR has submitted an application to SWRCB in advance of TROA becoming effective, but the proposed change would not become effective unless and until TROA is executed and, by its terms, becomes effective.

##### *iv. Independence Lake*

Private Water in Independence Lake would continue to be stored and released to serve M&I demand under TROA as under No Action and LWSA. However, during a drought situation when storage in Independence Lake is less than 7,500 acre-feet, TMWA could only release its water to maintain minimum streamflows, for emergencies, or to meet customer demands when its water from Donner Lake and TMWA M&I Credit Water are insufficient.

TROA would require the United States and California to exchange water with TMWA to maintain Independence Lake at an elevation that would allow LCT to move to upstream spawning habitat. As under the Interim Storage Agreement, California could direct TMWA to provide and maintain a fish channel through the Independence Creek delta when storage is forecast to be below 7,500 acre-feet during the summer. The Interim Storage Agreement would terminate with TROA, and TMWA Interim Storage (table 2.2) under No Action and LWSA would be replaced with TMWA M&I Credit Water.

*v. Stampede Reservoir*

As under No Action and LWSA, Stampede Project Water would continue to be managed for minimum releases from Stampede Reservoir and for the benefit of Pyramid Lake fishes. Under TROA, however, Stampede Project Water would continue to be used for Pyramid Lake fishes even if they are no longer listed under ESA. TROA would also allow the United States to apply to SWRCB to increase Stampede Reservoir's California Water Right to a maximum diversion to storage of 226,500 acre-feet annually, of which only the first 126,000 acre-feet could be stored as Stampede Project Water and the remainder as Fish Credit Water. BOR has submitted an application to SWRCB in advance of TROA becoming effective, but the proposed change and appropriation would not become effective unless and until TROA is executed and, by its terms, becomes effective. As under No Action and LWSA, water stored in Stampede Reservoir under TROA could only be used to generate electricity at Stampede Dam's two hydroelectric plants incidental to its release for other purposes.

*vi. Martis Creek Reservoir*

Operation of Martis Creek Reservoir would be the same as under No Action and LWSA.

*vii. Lahontan Reservoir*

Operation of Lahontan Reservoir would be the same as under No Action and LWSA, except for the addition of the opportunity to accumulate and manage Newlands Project Credit Water. (See "Newlands Project Credit Water.")

***b. Recreational Pools***

As under No Action and LWSA, TROA would not require recreational pools to be maintained, but would provide opportunities under California Guidelines to voluntarily achieve and maintain recreational pools in certain reservoirs. (See "California Guidelines." Also, see attachment F for a sample draft of the California Guidelines.)

***c. Minimum Fish Pools***

As a protection mechanism for fish, TROA would require that releases of Credit Water and Project Water from Prosser Creek Reservoir not allow storage to fall below

5,000 acre-feet or such lesser amount as determined by the California Department of Fish and Game to better service fishery resources.

### *d. Minimum Reservoir Releases*

Minimum releases from all reservoirs, except Prosser Creek Reservoir and Independence Lake, to maintain streamflows would be the same as under No Action and LWSA (table 2.4). TROA, however, would provide more opportunities to achieve minimum releases and more opportunities to provide greater-than-minimum releases (i.e., enhanced minimum releases).

#### *i. Prosser Creek Reservoir*

Under TROA, a minimum release of 5 cfs would be maintained from Prosser Creek Reservoir, to the extent water is available, even if inflow to the reservoir is less than the minimum release.

#### *ii. Independence Lake*

Compared to No Action and LWSA, TROA would require greater minimum releases from Independence Lake that would not be subject to exchange and re-storage rules for enhanced minimum releases. (See "Enhanced Minimum Releases.") These releases would vary with the month and volume of water stored. During a normal season (defined in table 2.8), minimum releases would be increased by 2 to 6 cfs as long as at least 12,500 acre-feet are in storage. When storage is below this amount but greater than 7,500 acre-feet, releases would be maintained so that the average Independence Creek flow would be at least 2 to 6 cfs greater than minimum flows. Under these circumstances, however, not less than 2 to 4 cfs would be released from storage. No additional releases would be made when storage is less than 7,500 acre-feet. During a dry season (defined in table 2.8), additional releases up to 2 cfs would be made only when storage is greater than 7,500 acre-feet.

#### *iii. Enhanced Minimum Releases*

During normal and dry seasons, Credit Water and Project Waters could be used to enhance minimum releases. These waters would supplement minimum releases shown in table 2.3 to achieve the enhanced minimum release shown in table 2.8. These waters could only be used to enhance minimum releases if they could be re-stored in another reservoir or exchanged for water in another reservoir.

### *e. Flood Control Operations and Dam Safety Requirements*

Flood control operations and dam safety requirements would be the same as under No Action and LWSA.

Table 2.8.—Enhanced minimum releases (cfs) from specified reservoirs during normal[1] and dry[2] seasons (these releases include minimum releases shown in table 2.4)

| Reservoir/lake | Normal season | Dry season |
|---|---|---|
| Tahoe | 75 | 37.5 - 75 |
| Donner | 8 | 4 |
| Prosser Creek<br>- September - February<br>- March - August | <br>25<br>8 | <br>12<br>8 |
| Stampede | 45 | 22.5 – 45 |

[1] "Normal" season is a monthly characterization of water conditions when either the amount of Floriston Rate Water stored in Lake Tahoe or the April through July forecast for the California Truckee River basin supply is "moderate to high." (See figures 9-1 through 9-10 of the Draft Agreement.)

[2] "Dry" season is a monthly characterization of water conditions when either the amount of Floriston Rate Water stored in Lake Tahoe or the April through July forecast for the California Truckee River basin supply is "low." (See figures 9-1 through 9-10 of the Draft Agreement.)

### *f. Spills and Precautionary Releases*

Because more than one water category could be in a reservoir when the reservoir begins to spill, TROA would establish the order in which the water categories would spill (table 2.9). Firm M&I Credit Water and TMWA Emergency Credit Water would not spill.

### *g. Reservoir Pumping*

Under certain conditions, permission could be sought to pump (or siphon) water from Lake Tahoe and Independence Lake.

#### *i. Lake Tahoe*

Pumping or other means could be used to remove water from Lake Tahoe to the Truckee River for M&I purposes only when all of the following conditions are met: (1) TMWA's M&I water supply is less than that provided during the 1928-1935 period,[31] (2) water could not be released by gravity (i.e., lake elevation is below the rim); (3) the action complies with applicable Federal and California laws (e.g., NEPA, CEQA, Clean Water Act, and water right laws); and (4) the Secretary of the Interior, Governor of California, and Governor of Nevada concur.

#### *ii. Independence Lake*

TMWA could pump water from Independence Lake to Independence Creek only when all of the following conditions are met: (1) water cannot be released sufficiently by gravity; (2) TMWA holds necessary permits; and (3) an emergency or drought situation exists.

[31] This time period is referred to in the Draft Agreement as the "critical drought period."

Table 2.9.—Water spill order (first to last)[1]

| | |
|---|---|
| 1. | Other Credit Water and Additional California Environmental Credit Water |
| 2. | Newlands Project Credit Water |
| 3. | Project Water in Another Reservoir |
| 4. | Water Quality Credit Water and Fernley Municipal Credit Water |
| 5. | California Environmental Credit Water |
| 6. | California M&I Credit Water |
| 7. | Fish Credit Water, Joint Program Fish Credit Water, and Non-Firm M&I Credit Water[2] |
| 8. | Project Waters and Private Waters from their respective reservoirs[3] |

[1] Where two or more categories appear, they generally share equally.
[2] The spill order within this group varies with the type of water year.
[3] Prosser Project Water reserved for Pyramid Lake fishes would spill before that reserved for minimum releases, then TMWA Emergency Credit Water, and last would be Tahoe-Prosser Exchange Water.

### *h. Emergencies*

As under No Action and LWSA, Federal, State, or local government agencies would continue to respond to emergencies involving facilities or resources addressed in TROA. The Administrator would be authorized to take actions necessary to respond to an emergency.

## 4. Truckee River Hydroelectric Plant Diversion Dams

Truckee River hydroelectric plant diversion dams (Farad, Fleish, Verdi, and Washoe) would be operated under TROA similar to No Action, except that the minimum bypass flow at each would be 50 cfs. The United States and Pyramid Tribe, under certain conditions and at their discretion, could supplement the minimum bypass flows with the release of Fish Water.[32] Implementation of the TROA minimum bypass flow provision for the Farad Diversion Dam depends on a revision of the 150-cfs minimum bypass flow described under No Action.[33]

TMWA would continue to be allowed to divert water from the Truckee River during December-February as needed to remove ice from the Highland Ditch. TROA, however, would allow Fish Credit Water and Fish Water to be released and bypassed for streamflow to compensate for this diversion.

[32] Under TROA, the rate at which Fish Water must be bypassed at each hydroelectric plant diversion dam to supplement minimum bypass flows depends on the season and the rate at which Fish Credit Water, Other Credit Water owned by the United States, and Newlands Project Credit Water are being captured in storage at the time. Up to 50 cfs of Fish Water (October–April) or up to 150 cfs (May–September) may be released for such supplementation.

[33] According to term and condition No. 12 of SWRCB's 401 Certification for the Farad Diversion Dam Replacement Project proposed by Sierra Pacific Power Company, "SPPC shall maintain a minimum flow of 150 cfs in the bypass reach below the diversion dam, or total Truckee River flow immediately upstream of the diversion dam, whichever is less, in the operation area. The SWRCB may, in its discretion, revise this flow requirement to take into account relevant TROA provisions, if information in the final EIS/EIR [for TROA] indicates that a revised flow is more effective than Condition 6-3 [same as item 12]."

### 5. Water Exportation from Little Truckee River to Sierra Valley

Exporting water from the Little Truckee River to Sierra Valley would be the same as under No Action and LWSA. In addition, TROA recognizes that, if an agreement were negotiated with holders of rights to the Sierra Valley diversion, to transfer water or water rights pursuant to California law, any water so transferred could be retained in the Truckee River basin and stored as Credit Water.

### 6. Municipal and Industrial Water Resources

#### *a. TMWA*

As under No Action and LWSA, TMWA would continue to exercise its existing water rights and expand its conservation and acquisition programs. In addition, TROA would not prevent TMWA from (1) acquiring Truckee River basin water rights in addition to those necessary to meet its normal water year demand of 119,000 acre-feet, (2) importing water to the Truckee River basin, and (3) developing groundwater rights in excess of 15,950 acre-feet. Such actions, however, could not adversely affect water rights of the Pyramid Tribe or the United States, and TMWA would comply with all applicable Federal, State, and local laws.

##### *i. Exercise of Existing Water Rights*

TMWA would continue to exercise, as under No Action and LWSA, its: (1) right under TRA to divert up to 40 cfs from the Truckee River, (2) rights to surface flows of Hunter Creek, (3) Private Water in Donner Lake and Independence Lake, and (4) former irrigation water rights addressed in the next paragraph.

##### *ii. Transfer of Irrigation Water Rights to M&I Use*

As under No Action and LWSA, developers in the Truckee Meadows would continue to purchase and dedicate irrigation water rights to TMWA for new water service. Because TROA would require 1.11 acre-feet of water rights for every acre-foot of new service commitment (versus 1.00 acre-foot per acre-foot of commitment under No Action and LWSA), TMWA anticipates that under TROA developers would provide an additional 36,380 acre-feet of water by 2033 (10,520 acre-feet more than under No Action and LWSA). This extra water would be used to accumulate TMWA M&I Credit Water. This requirement would remain in effect until TMWA's normal water year supply from all TROA-related sources[34] reached 119,000 acre-feet. This excess water would be used to store TMWA M&I Credit Water during non-drought years and to serve its customers during drought situations.

TMWA could attempt to supplement its water rights by acquiring TCID's right in Donner Lake which it could then manage as provided under TROA to increase its drought supply.

[34] TMWA could use resources not covered by TROA (e.g., imported water), to serve its customers.

TMWA could seek permission to pump up to 2,000 acre-feet from the Sparks Marina Lake when making emergency repairs or during a drought situation.

*iii. Pumping Truckee Meadows Groundwater*

Under TROA, TMWA likely would pump up to 12,570 acre-feet of groundwater from the Truckee Meadows aquifer during normal water years and up to 15,950 acre-feet during drought situations.

*iv. Water Conservation*

TMWA would not use water saved by the M&I conservation practices to serve existing and new water customers during normal water years unless agreed to by the Pyramid Tribe and the Secretary, and unless applicable laws are changed. TROA would require that water conserved by retrofitting residences with water meters not be used to serve water customers during normal water years. In addition to the normal water year conservation program (10 percent annual savings target), TMWA anticipates that an additional 5 percent would be saved during drought situations under TROA.

***b. City of Fernley***

The same amount of surface water and groundwater would be used to serve M&I demand in the vicinity of Fernley under TROA as under No Action and LWSA. Fernley Municipal Credit Water, if included in the final Agreement, would be used for M&I demand, environmental purposes, and recharging the local aquifer.

***c. Lake Tahoe Basin in Nevada***

As under No Action and LWSA, surface water would continue to be diverted from tributaries entering Lake Tahoe and pumped from Lake Tahoe and the local aquifers to serve M&I demand in the Lake Tahoe basin in Nevada.

***d. Lake Tahoe and Truckee River Basins in California***

As under No Action and LWSA, surface water would continue to be diverted and groundwater pumped from local aquifers to serve M&I demand in California. California anticipates that the annual demand for water (both surface and ground) in the upper Truckee River and Lake Tahoe basins by 2033 would be the same under TROA as under No Action and LWSA, though the water source under TROA would differ from that under No Action (table 2.5). Annual use of upper Truckee River basin surface water rights likely would increase from the current 2,800 acre-feet to 4,300 acre-feet, while annual groundwater pumping in basin likely would increase from the current pumping rate of 7,570 acre-feet to 18,400 acre-feet (rather than 19,600 acre-feet under No Action). As under No Action and LWSA, annual water usage in the Lake Tahoe basin in California under TROA likely would increase from the current 18,700 acre-feet to 23,000 acre-feet.

### 7. Administration, Accounting, and Scheduling

The Administrator would be responsible for carrying out the terms and conditions of TROA. Primary responsibilities would be to (1) classify Credit Waters as they are stored; (2) keep records of and prepare reports covering water storage, release, exchange and use; (3) schedule and coordinate operations; (4) ensure that Credit Waters are used for their designated purposes; and (5) coordinate with the Federal Water Master to avoid conflicts with water rights under the *Orr Ditch* Decree. The Federal Water Master would continue to be responsible for administering the provisions of the *Orr Ditch* Decree and would become the first TROA Administrator. A Special Hearing Officer would be appointed by a four-member committee—representing United States, California, Nevada, and the Pyramid Tribe—to resolve disputes arising under TROA.

#### *a. Scheduling*

Water managers would formulate water storage and release schedules, and the Administrator would combine all such schedules into an operating plan for all Truckee River reservoirs to satisfy the exercise of water rights and minimum streamflows.

#### *b. Accounting*

TROA would provide criteria for developing and maintaining a water accounting system. Accounting requirements identified in P.L. 101-618 for surface water and groundwater use in the Lake Tahoe and Truckee River basins would be established to determine compliance with the interstate allocations.

#### *c. Cost of Administration*

United States, California, and Nevada would share the cost of administration (40, 20, and 40 percent, respectively).

### 8. Additional Elements Unique to TROA

#### *a. California Guidelines*

California would issue each year a set of streamflow, reservoir storage level, and other environmental objectives for reservoir operations that would enhance fish habitat, riparian vegetation, water quality, and recreational opportunities in the upper Truckee River basin. Although not mandatory, the Administrator would encourage the parties to consider the guidelines in their scheduling consistent with their water rights and provisions of TROA.

#### *b. Habitat Restoration Fund*

Parties to TROA would provide $50,000 to $100,000 a year for 30 years to a habitat restoration fund. California would receive the money during the first 2 years. During the

following 28 years, the money would be given annually to California, Nevada, or the Pyramid Tribe until each received 10 yearly allocations. The fund would be used for fish habitat restoration or to maintain projects in the Truckee River basin. The three parties are encouraged to leverage their distributions with any other funds under their control, and with donations and grants.

#### *c. Storage Contract and Hydroelectric Compensation*

Any party accumulating Credit Water in Federal reservoirs under TROA, except United States and the Pyramid Tribe, and California in relation to Joint Program Fish Credit Water, would be required to have a storage contract with United States. Storage contracts are one of the administrative mechanisms by which TROA is made effective. As TROA is signed, accepted by the courts, and implemented, storage contracts also would be implemented to effectuate the storage aspects of TROA. The environmental effects of TROA and, by extension, these storage contracts are analyzed in this revised DEIS/EIR. Contracts for TMWA, Reno, Sparks, Washoe County, California, and Fernley to use Federal reservoirs under BOR's jurisdiction would be for 40 years, and renewable every 40 years thereafter as long as TROA is in effect. Renewal would be conditioned on re-negotiation of storage fees.

TMWA could also impose storage fees consistent with the Draft Agreement for Credit Water in Independence Lake and in its portion of Donner Lake. Washoe County Water Conservation District would be compensated for the incremental increase in operation and maintenance costs associated with Boca Reservoir due to Credit Water and Stampede Project Water operations.

Agreement would be reached with Sierra Pacific regarding compensation for reduction in hydroelectric generation, if any, arising from the operation of Fish Credit Water, Newlands Project Credit Water, Other Credit Water, some California Environment Credit Water, and releases of Fish Water for streamflow immediately downstream (bypass flow) from each hydroelectric plant diversion dam. Sierra Pacific would waive compensation for operation of Water Quality Credit Water, Fernley Municipal Credit Water, and California M&I Credit Water.

#### *d. Mitigation*

TROA would include measures, as necessary, to reduce or avoid significant adverse environmental effects, if any, resulting from implementation of the Draft Agreement.

#### *e. California Public Trust Doctrine*

Section 1.A.2 of the Draft Agreement declares that TROA is intended to implement California's responsibilities under the public trust doctrine by effecting a balancing between recreation, streamflows, and other public trust uses of water with the requirements of P.L. 101-618. The public trust doctrine requires the State to protect public trust uses, to balance between public trust uses and consumptive uses when

allocating water, and to avoid or minimize harm to public trust resources where feasible. Section 1.A.3 acknowledges that California will evaluate impacts to resources protected by the public trust when it considers the final EIS/EIR and makes the findings required by CEQA. SWRCB will consider public trust when considering any projects discussed in the revised DEIS/EIR that require its approval.

#### *f. Certain Credit Waters*

Section 205(a)(3) of P.L. 101-618 provides great flexibility for TROA to accommodate other actions to provide benefits beyond those originally contemplated in the Preliminary Settlement Agreement as Modified by the Ratification Agreement. TROA makes use of this flexibility, including the "...may include, but is not limited to..." language at section 205(a)(3) and addresses provisions that could improve operations to even better provide for protection and enhancement of fish listed under the Endangered Species Act (205(a)(3)(D)), enhance instream beneficial uses (205(a)(3)(G)), and accommodate California's allocation of Truckee River water (205(a)(3)(I)) through Credit Water provisions. Specifically, the Draft Agreement provides for California Environmental Credit Water, California Additional California Environmental Credit Water, and Other Credit Water. In each case, further action (beyond TROA being signed and entering into effect) would be required to implement these provisions (i.e., storage contracts in the case of the California categories and possibly Other Credit Water); proposals for their use have not yet been specified.

### D. Change Petitions and Water Right Applications

California water right licenses for Prosser Creek Reservoir, Independence Lake, and Boca Reservoir, and California water right permit for Stampede Reservoir must be changed to allow water categories other than those currently described in the licenses or permit to be captured and stored in these reservoirs. Because the parties to the Draft Agreement consider such changes necessary to accomplish the purposes of TROA (Article Twelve of the Draft Agreement), it could not enter into effect unless SWRCB approved the related change petitions.[35]

Under TROA, the Secretary could file water right applications with SWRCB to increase the amount of project water captured in Stampede Reservoir each year and remove the release limit from Prosser Creek Reservoir. (See "Prosser Creek Reservoir" and "Stampede Reservoir.") These applications would allow for increased storage and retention of Fish Credit Water until needed by Pyramid Lake fishes. Because the parties to the Draft Agreement consider such applications useful, but not essential, to accomplish the purpose of TROA, TROA would enter into effect even if SWRCB did not approve these water right applications.[36]

[35] Change petitions would request additional points of diversion, additional purposes of use, and expanded places of use in both California and Nevada.

[36] Provisions of TROA dependent on the approval of the SWRCB would not enter into effect.

TROA would include measures as necessary to reduce or avoid significant adverse environmental effects, if any, resulting from the implementation of the Draft Agreement.

# V. ALTERNATIVES CONSIDERED AND REJECTED

As discussed previously, numerous alternatives were evaluated to assist the negotiators in developing an operating agreement. Constructing a new reservoir was not considered as an alternative because it would have exacerbated degradation of riverine fish and riparian habitat as well as created additional cumulative environmental impacts throughout the Truckee River basin.

In January 1996, a Report to the Negotiators was completed and circulated to all negotiating parties. The document was originally expected to serve as the draft EIS/EIR for TROA. However, during review of the draft document, the TROA EIS/EIR Management Team concluded that numerous issues, whose environmental effects were indeterminate, were still being negotiated and it was premature to issue a draft EIS/EIR for public review. Consequently, the title of the document was modified, and its distribution was restricted to the negotiating parties. The Report to the Negotiators served three purposes: (1) to provide analytical information requested by the negotiators; (2) to highlight issues raised during public scoping; and (3) to provide the negotiators with additional information on potential impacts of proposals being considered. Attachment G, part 1, is a detailed account of the Report to the Negotiators, and attachment G, part 2, is a list of operational components rejected from further consideration in the report. Attachment G, part 3, is a detailed description of computer simulations used in the report to evaluate impacts of various reservoir operations on streamflow and recreational pools.

The Report to the Negotiators included a NEPA-style analysis of five potential project alternatives. Even though a number of issues had yet to be resolved through negotiations at the time the Report to the Negotiators was completed, one alternative represented some essential components of TROA. Four additional alternatives addressed each of the predominant issues identified during the public scoping process: streamflow, recreational pools, threatened and endangered species, and storage of California water. Potential impacts to water supply in the study area were given special attention, and an extensive hydrologic modeling effort was completed to characterize possible differences among the alternatives.

In reviewing the alternatives identified in the Report to the Negotiators, the negotiators recognized a number of important issues. Foremost among those was that water rights, frequently those of M&I water supplies, would be compromised to varying degrees by each of the four additional alternatives. To achieve the identified objectives, these alternatives would have required water to be stored and released without permission of the owners, precluded certain storage and release for decreed water rights and uses, and provided benefits to non-water-righted uses at the expense of water-righted uses. Such actions were in conflict with section 205(a)(2) of P.L. 101-618, which states water is to

be stored and released from Truckee River Reservoirs[37] to satisfy the exercise of water rights in conformance with both the *Orr Ditch* and the *Truckee River General Electric* Decrees. The projected adverse effects on water resources of each preliminary alternative were unacceptable to one or more of the negotiating parties with mandatory signature authority. The Basic TROA Alternative had the least adverse impact on water rights, but it, too, created conditions that were unacceptable to negotiators and, in some cases, did not comply with existing law. Accordingly, the alternatives evaluated in the Report to the Negotiators were rejected, and the negotiations continued.

### A. Basic TROA Alternative

This alternative emphasized implementing PSA, i.e., providing drought relief for Truckee Meadows and enhancing spawning flows for Pyramid Lake fishes. As part of this alternative, the portion of California's surface water allocation not needed to satisfy projected future water rights would remain in the Truckee River to serve downstream water rights. Existing mandatory minimum streamflows would remain in place, and Credit Water stored pursuant to PSA could be exchanged to increase the potential for maintaining streamflows. Preferred streamflows were identified as being desirable but not mandatory for fish resources. In addition, storage and releases of Credit Water could be exchanged among reservoirs to achieve non-mandatory recreational pool storage targets.

This alternative would have increased the average storage in Lake Tahoe and in Prosser Creek, Stampede, and Boca Reservoirs as compared to No Action, and improved flow conditions for cui-ui spawning. However, water supplies for M&I use in Truckee Meadows and agricultural use in Truckee Meadows and the Carson Division of the Newlands Project would be less than under No Action. Streamflows for spring spawning fish would benefit at the expenses of fall spawning fish.

### B. Streamflow Alternative

This alternative responded to issues raised during scoping regarding general well-being of fish and wildlife, stream-based recreation, and water quality in the Truckee River. It identified higher mandatory minimum flows, preferred streamflows, and enhanced spawning flows for cui-ui. The reservoirs would be operated to provide those mandatory streamflows by releasing all categories of water (Floriston Rate Water, Credit Water, and Private Water whenever needed and available). No storage credit would be provided to compensate for these releases. California's excess surface water—the portion of California's 10,000-acre-foot allocation not used to satisfy existing water rights—would be stored as Secondary Stored Water[38] and released to help maintain mandatory streamflows. This alternative tended to release water at times that it could not be used to serve water rights.

[37] The term, "Truckee River Reservoirs," is defines in P.L. 101-618, Title II, as "the storage provided by the dam at the outlet of Lake Tahoe, Boca Reservoir, Prosser Creek Reservoir, Martis Reservoir, and Stampede Reservoir."

[38] Secondary Stored Water is an earlier name for Other Credit Water.

In comparison to No Action, this alternative would increase flows in the Truckee River, particularly during the summer when flows are the lowest, thereby benefiting spring spawning fish, riparian vegetation, and water quality. These benefits would be realized, however, at the expense of reservoir storage, which would reduce recreational opportunities and the amount of water available for M&I and agricultural uses. Fall spawning fish would also be adversely impacted.

### C. Recreational Pools Alternative

This alternative responded to the issue of lake and reservoir-based recreation. It created mandatory storage targets for all reservoirs from May through August, with the intent of enhancing recreational opportunities. To achieve mandatory reservoir storage targets, releases were prohibited any time storage was less than or equal to the established target. This alternative did not optimize the use of storage to serve water rights.

This alternative would increase opportunities for recreational activities in Prosser Creek, Stampede, and Boca Reservoirs. Populations of fall and spring spawning fish in some tributaries would benefit by more frequent achieve of minimum and preferred flows. LCT in Independence Lake and cui-ui would have less favorable conditions than under No Action. Water supplies availability, however, would be less than under No Action for M&I use in the Truckee Meadows and for agriculture in Truckee Meadows and the Newlands Project.

### D. Threatened and Endangered Species Alternative

This alternative responded to the issue of Pyramid Lake fishes. It established mandatory minimum streamflow requirements that were greater than existing minimum streamflow requirements to provide higher flows in the lower Truckee River during the spawning season. To achieve the flow targets, categories of water could be released and exchanged irrespective of whether they could be re-stored or protected from depletion. This alternative tended to release storage necessary to serve water rights in a drought.

This alternative would substantially increase flows for cui-ui and LCT in the lower Truckee River as compared those under the other alternatives. This increase would also benefit water quality, but would be adverse to fall spawning fish. Water supplies availability, however, would be less than under No Action for M&I use in the Truckee Meadows and for agriculture in Truckee Meadows and the Newlands Project. There would be little impact to recreation.

### E. California Assured Storage Alternative

This alternative was California's preliminary proposal to maintain 50,000 acre-feet of carryover storage to serve beneficial uses in California. The unused portion of the interstate allocation, assumed to be 8,800 acre-feet, could be stored each year in Prosser Creek and Stampede Reservoirs, and any storage could be carried over from year to year up to a maximum of 50,000 acre-feet.

As would be expected, storage of California water would be greater under this alternative than under No Action. Riparian habitat would also improve. Spring spawning fish would benefit by more frequent achievement of preferred and minimum flows, while opposite flow conditions would occur for fall spawning fish. Water supplies availability, however, would be less than under No Action for M&I use in the Truckee Meadows and agriculture in the Truckee Meadows and Newlands Project. There would be little impact to recreation.

## VI. IDENTIFICATION OF THE PREFERRED ALTERNATIVE (NEPA) AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE (CEQA)

Council of Environmental Quality regulations (40 CFR 1502.14(e)) require identifying a preferred alternative in the draft EIS, if such a preference is known. In this instance, TROA is the preferred alternative because it is the result of a multi-party negotiation process and the five mandatory signatory parties have expressed their preference for and willingness to abide by the conditions in the Draft Agreement.

Section 15126.6(c) of the CEQA Guidelines requires an EIR to identify the environmentally superior alternative. In this instance, TROA is the environmentally superior alternative because it contains procedures designed to make more efficient use of existing Truckee River reservoirs and to provide multiple benefits, such as enhanced conditions for endangered cui-ui and threatened Lahontan cutthroat trout; reduced streamflow variability; enhanced season streamflows and water quality; and maintenance of reservoir storage to better serve recreational uses.

## VII. SUMMARY OF EFFECTS

Table 2.10 summarizes the effects of the alternatives on the resources of the study area. The table presents relative differences between the action alternatives and No Action, and between all the alternatives and current conditions. Current conditions data for some indicators, including population, employment, and income, are presented in the table to provide a specific basis of comparison with the alternatives. Current conditions are described in chapter 3, under "Affected Environment," for each resource. No significant adverse effects are expected to occur under TROA.

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| **Water resources** | | | |
| **Reservoir storage and releases** | | | |
| Total amount of water in storage upstream of Farad | Slightly less than under current conditions. | Same as under No Action. | Much greater than under No Action and current conditions. |
| Lake Tahoe | Slightly less storage and same releases as under current conditions. | Same storage and releases as under No Action. | Similar storage and much higher May-June releases than under No Action and current conditions. |
| Donner Lake | Same storage and releases as under current conditions. | Same storage and releases as under No Action. | Similar storage as under No Action and much higher September-October releases than under No Action. |
| Prosser Creek Reservoir | Wet hydrologic conditions: same storage and releases as under current conditions.<br><br>Median hydrologic conditions: greater July–September storage; lower May–June releases; much higher October releases than under current conditions.<br><br>Dry hydrologic conditions: much greater January–December storage; lower May–June releases; much higher October releases than under current conditions. | Same storage and releases as under No Action in all three hydrologic conditions. | Wet hydrologic conditions: same storage and releases as under No Action.<br><br>Median hydrologic conditions: greater April–September storage; lower May-June releases; much higher September–October releases than under No Action and current conditions.<br><br>Dry hydrologic conditions: much greater January–December storage; lower May–June releases; much higher September–October releases than under No Action and current conditions. |
| Independence Lake | Same storage and releases as under current conditions. | Same storage and releases as under No Action. | Wet and median hydrologic conditions: same storage and releases as under No Action.<br><br>Dry hydrologic conditions: greater July–September storage; less November–June storage; higher May–September releases than under No Action and current conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| Stampede Reservoir | Wet hydrologic conditions: greater August-September storage and same releases as under current conditions.<br><br>Median hydrologic conditions: less January–December storage and same releases as under current conditions.<br><br>Dry hydrologic conditions: greater January–December storage and higher March and July releases than under current conditions. | Same storage and releases as under No Action. | Wet hydrologic conditions: greater May–September storage and higher September–December releases than under No Action and current conditions.<br><br>Median hydrologic conditions: much greater January–December storage; lower November–August releases; much higher October releases than under No Action and current conditions.<br><br>Dry hydrologic conditions: much greater January–December storage and releases than under No Action and current conditions. |
| Boca Reservoir | Same storage and releases as under current conditions. | Same storage and releases as under No Action. | Wet hydrologic conditions: less August and greater October–December storage than under No Action.<br><br>Median hydrologic conditions: greater August–March storage than under No Action.<br><br>Dry hydrologic conditions: greater January–December storage than under No Action. |
| Pyramid Lake | Ending elevation and inflow lower than under current conditions. | Ending elevation, and inflow lower than under No Action and current conditions. | Ending elevation and inflow higher than under No Action and current conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| Lahontan Reservoir | Wet hydrologic conditions: slightly greater September–February storage; same releases as under current conditions.<br><br>Median and dry hydrologic conditions: less January–December storage; lower April–September releases than under current conditions. | Same as storage and releases under No Action. | Same as storage and releases under No Action. |
| **Truckee River flow** | | | |
| Farad | Slightly lower than under current conditions. | Same as under No Action. | Wet hydrologic conditions: higher December–June and August–September flows than under No Action and current conditions.<br><br>Median hydrologic conditions: lower June–January flows and higher March–May flows than under No Action and current conditions.<br><br>Dry conditions: lower December–July flows and higher September–October flows than under No Action and current conditions. |
| Vista | Slightly lower than under current conditions. | Same as under No Action. | Wet hydrologic conditions: slightly higher January–May flows than under No Action and current conditions.<br><br>Median hydrologic conditions: higher April–October flows and lower November–March flows than under No Action and current conditions.<br><br>Dry hydrologic conditions: lower November–June flows and higher July–October flows than under No Action and current conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| Nixon | Wet and median hydrologic conditions: same as under current conditions.<br><br>Dry hydrologic conditions: higher August–February flows than under current conditions. | Same as under No Action. | Wet hydrologic conditions: slightly higher December–July flows than under No Action and current conditions.<br><br>Median hydrologic conditions: higher April–October flows and lower November–March flows than under No Action and current conditions.<br><br>Dry hydrologic conditions: higher August–February flows than under No Action and current conditions. |
| **Exercise of water rights to meet demand** | | | |
| Agricultural | Truckee Meadows: much less demand and a greater percentage of demand met in minimum supply year than under current conditions.<br><br>Newlands Project: much less demand and less percentage of demand met in minimum supply year than under current conditions.<br><br>Lower Truckee River basin: much greater demand and same percentage of demand met in minimum supply year as under current conditions. | Truckee Meadows: same demand as under No Action and a greater percentage of demand met in minimum supply year than under current conditions.<br><br>Newlands Project: same demand and slightly less percentage of demand met in minimum supply year than under No Action; much less demand and less percentage of demand met in minimum supply year than under current conditions.<br><br>Lower Truckee River basin: same as under No Action. | Truckee Meadows: much less demand than under No Action and current conditions and greater percentage of demand met in minimum supply year than under No Action and current conditions.<br><br>Newlands Project: same demand and slightly greater percentage of demand met in the minimum supply year than under No Action; much less demand and less percentage of demand met in minimum supply year than under current conditions.<br><br>Lower Truckee River basin: same as under No Action. |

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| M&I | Lake Tahoe basin: much greater demand and same percentage of demand met in minimum supply year as under current conditions.<br><br>Truckee River basin in California: much greater demand and same percentage of demand met in minimum supply year as under current conditions.<br><br>Truckee Meadows: much greater demand and less percentage of demand met in minimum supply year than under current conditions. | Lake Tahoe basin: same as under No Action.<br><br>Truckee River basin in California: same as under No Action.<br><br>Truckee Meadows: same demand and greater percentage of demand met in minimum supply year than under No Action; much greater demand and less percentage of demand met in minimum supply year than under current conditions. | Lake Tahoe basin: same as under No Action.<br><br>Truckee River basin in California: same as under No Action.<br><br>Truckee Meadows: same demand and greater percentage demand met in minimum supply year than under No Action; much greater demand and less percentage of demand met in minimum supply year than under current conditions. |
| Groundwater | | | |
| Recharge of aquifer adjacent to Truckee River in the Oxbow reach | Slightly less than under current conditions. | Same as under No Action. | Slightly more than under No Action; same as under current conditions. |
| Recharge of the shallow aquifer in Truckee Meadows | Slightly less than under current conditions | Similar to No Action | Possibly less than under No Action depending on current land use. |
| Recharge of shallow aquifer near Truckee Canal due to seepage loss | Less than under current conditions. | Similar to No Action. | Similar to No Action. |
| Well pumping in the shallow aquifer | Slightly less than under current conditions. | Same as under No Action, except slightly more in dry hydrologic conditions. | Slightly less than under current conditions, except in dry hydrologic conditions. |
| Water quality | | | |
| Truckee River flows downstream from TTSA, downstream from Reno, and into Pyramid Lake | Slightly more than under current conditions in dry hydrologic conditions. | Same as under No Action. | Slightly more than under No Action or current conditions in dry hydrologic conditions. |
| Days that temperature standards are violated downstream from Reno | Much more than under current conditions in representative dry years. | Same as under No Action. | Much less than under No Action; similar to current conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| Days that dissolved oxygen standards are violated downstream from Reno | Much less than under current conditions. | Same as under No Action. | Much less than under No Action and current conditions. |
| Total dissolved solids, total nitrogen, and total phosphorus loadings to Pyramid Lake | About the same as under current conditions, except slightly less in representative dry years. | Same as under No Action. | Cumulatively about the same as under No Action and current conditions. |
| **Sedimentation and erosion** | | | |
| Shoreline erosion at Lake Tahoe | No man-made induced degradation of any water quality parameters | Same as under No Action. | Same as under No Action. |
| Stream channel erosion and sediment transport capacity change | Truckee River from Donner Creek to the Little Truckee River confluence: same as or less than under current conditions.<br><br>Little Truckee River from Stampede Dam to Boca Reservoir: same as under current conditions.<br><br>Spice: about the same as under current conditions.<br><br>Lockwood: less sediment transport and more deposition than under current conditions.<br><br>Nixon: about the same as under current conditions. | Truckee River from Donner Creek to the Little Truckee River confluence: same as under No Action.<br><br>Little Truckee River from Stampede Dam to Boca Reservoir: same as under No Action.<br><br>Spice: same as under No Action.<br><br>Lockwood: Same as under No Action.<br><br>Nixon reach: same as under No Action. | Truckee River from Donner Creek to the Little Truckee River confluence: about the same as under No Action.<br><br>Little Truckee River from Stampede Dam to Boca Reservoir: no overall effect.<br><br>Spice: no overall effect.<br><br>Lockwood: same as under current conditions; no overall effect compared to No Action.<br><br>Nixon reach: no overall effect. |
| Truckee River delta dynamics at Pyramid Lake | Same as under current conditions. | Same as under No Action. | Same as under No Action. |
| **Biological resources** | | | |
| Fish in rivers and tributaries | Better conditions for fish in a few reaches; significant adverse effects in some reaches compared to current conditions. | Same as under No Action. | Significant beneficial effects in many reaches compared to No Action and current conditions. |
| Fish in lakes and reservoirs | Significant beneficial effect on fish in Prosser Creek Reservoir compared to current conditions. | Same as under No Action. | Significant beneficial effects on fish in Prosser Creek, Stampede, and Boca Reservoirs compared to No Action and current conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| Waterfowl and shorebirds | Same as under current conditions. | Same as under No Action. | Significant beneficial effect at Stampede Reservoir compared to No Action and current conditions. |
| Riparian habitat and associated species | Wet and median hydrologic conditions: significant beneficial effects in a few reaches compared to current conditions.<br><br>Dry and extremely dry hydrologic conditions: significant beneficial effects in most reaches compared to current conditions. | Same as under No Action. | Median hydrologic conditions: significant beneficial effects in a few reaches compared to No Action and current conditions.<br><br>Dry and extremely dry hydrologic conditions: significant beneficial effects in all reaches compared to No Action and current conditions. |
| Endangered, threatened, and other special status species | Cui-ui and LCT: significant adverse effects compared to current conditions.<br><br>Bald eagle at Stampede Reservoir: significant beneficial effects compared to current conditions.<br><br>Tahoe yellow cress: same as under current conditions.<br><br>American white pelican: significant adverse effects compared to current conditions.<br><br>Other special status species: see riparian habitat and associated species. | Cui-ui and LCT: Same as under No Action.<br><br>Bald eagle at Stampede Reservoir: significant adverse effects compared to No Action.<br><br>Tahoe yellow cress: same as under No Action.<br><br>American white pelican: same as under No Action.<br><br>Other special status species: see riparian habitat and associated species. | Cui-ui and LCT: significant beneficial effects compared to No Action and current conditions.<br><br>Bald eagle at Stampede and Boca Reservoirs: significant beneficial effects compared to No Action and current conditions.<br><br>Tahoe yellow cress: same as under No Action.<br><br>American white pelican: significant beneficial effects compared to No Action and current conditions.<br><br>Other special status species: see riparian habitat and associated species. |
| **Recreation** | | | |
| Seasonal recreation visitation | Same as under current conditions, except slightly less at Donner Lake in median hydrologic conditions. | Same as under No Action, except slightly more at Donner Lake in median hydrologic conditions. | Same as under No Action, except more at Donner Lake and Prosser Creek, Stampede, and Boca Reservoirs in some hydrologic conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| | No Action | LWSA | TROA |
|---|---|---|---|
| Boat ramp usability | Same as under current conditions, except slightly more usable at Boca Reservoir in wet hydrologic conditions. | Same as under No Action. | Same as under No Action and current conditions, except slightly more or less usable at Donner Lake and Boca Reservoir in certain hydrologic conditions. |
| Suitability of flows for fly fishing | Same as under current conditions, with a few exceptions. | Same as under No Action. | Same as under No Action. |
| Suitability of flows for spin/lure/bait fishing | Desired flows would occur more often in the Little Truckee River from Independence Creek to Stampede Reservoir and in the Trophy reach in wet hydrologic conditions and less often in the Mayberry, Oxbow, and Spice reaches in dry hydrologic conditions than under current conditions. | Same as under No Action, except desired flows would occur more often in the Mayberry, Oxbow, and Spice reaches in median hydrologic conditions. | Desired flows would occur more often in Prosser Creek in median hydrologic conditions and in the Mayberry, Oxbow, and Spice reaches in wet hydrologic conditions and less often in several reaches, primarily in wet hydrologic conditions, than under No Action and current conditions. |
| Suitability of flows for rafting | Same as under current conditions. | Same as under No Action. | Same as under No Action, except that desired flows would occur less often in the Truckee River from Lake Tahoe to Donner Creek in wet hydrologic conditions and more often in the Mayberry, Oxbow, and Spice reaches in wet hydrologic conditions. |
| Suitability of flows for kayaking | Same as under current conditions. | Same as under No Action. | Same as under No Action, except that desired flows would occur less often in the Truckee River from Lake Tahoe to Donner Creek in wet hydrologic conditions and more often in the Mayberry, Oxbow, and Spice reaches in wet hydrologic conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| | Current conditions | No Action | LWSA | TROA |
|---|---|---|---|---|
| **Economic environment** | | | | |
| Recreation-based employment and income | Baseline (California)<br>Employment:<br>16,900 jobs<br>Income: $344 million | About the same employment and income as under current conditions (differences of less than 1 percent). | Same as under No Action. | Same as under No Action. |
| Employment and income affected by changes in water supply | Baseline (Nevada)<br>Employment:<br>199,700 jobs<br>Income: $4.8 billion | About the same employment and income as under current conditions (differences of less than 1 percent). | Same as under No Action. | Same as under No Action. |
| Hydropower generation and revenues | Wet hydrologic conditions:<br>65,548 MWh<br>$1.57 million<br><br>Median hydrologic conditions:<br>51,485 MWh<br>$1.23 million<br><br>Dry hydrologic conditions:<br>18,106 MWh<br>$0.43 million | Wet hydrologic conditions:<br>less than<br>1 percent greater than under current conditions.<br><br>Median hydrologic conditions: less than 1 percent less than under current conditions.<br><br>Dry hydrologic conditions: 2.3 percent less than under current conditions. | Wet hydrologic conditions: same as under No Action.<br><br>Median hydrologic conditions: less than 1 percent less than under No Action or current conditions.<br><br>Dry hydrologic conditions:<br>1.3 percent less than under No Action;<br>4 percent less than under current conditions. | Wet hydrologic conditions:<br>3.7 percent less than under No Action;<br>3.6 percent less than under current conditions.<br><br>Median hydrologic conditions:<br>5.9 percent less than under No Action;<br>6.1 percent less than under current conditions.<br><br>Dry hydrologic conditions:<br>58 percent greater than under No Action;<br>55 percent greater than under current conditions. |
| Total annual groundwater development costs | $1,520,395 | $3,348,102 or 120 percent greater than under current conditions. | 40 percent greater than under No Action;<br>$4,696,483 or 200 percent greater than under current conditions. | 35 percent less than under No Action;<br>$2,151,982 or 42 percent greater than under current conditions. |

Table 2.10.—Summary of effects of alternatives on resources

| Indicator | Current conditions | No Action | LWSA | TROA |
|---|---|---|---|---|
| **Social environment** | | | | |
| Population of Truckee Meadows | 284,147 | 440,874 | 440,874 | 440,874 |
| Urbanization of Truckee Meadows | M&I water supply of 83,140 acre-feet.<br><br>Baseline employment: 199,762 jobs<br><br>Baseline income $4.45 billion | Change in M&I water supply to meet additional 36,000 acre-foot demand (total 119,000 acre-foot demand) would support 73,000 full- and part-time jobs and $1.3 billion in personal income.<br><br>Transfers of agricultural water rights would result in about 234 fewer jobs, and about $3.1 million less in income (differences of less than 1 percent from baseline). | Same as under No Action. | About the same as under No Action (differences in employment and income of less than 1 percent from baseline). |
| Air Quality | Regulatory programs and monitoring in place to comply with air quality criteria standards. | Same as under current conditions. | Same as under No Action. | Same as under No Action. |
| **Cultural resources** | | | | |
| | Current | No Action | LWSA | TROA |
| Number of affected resources at lakes and reservoirs and percent [ ] of total recorded resources affected | 100<br>[38] | 99<br>[38] | 99<br>[38] | 88<br>[33] |
| Number of affected cultural resources along river and stream reaches and percent [ ] of total recorded resources affected | 18<br>[11] | 9<br>[6] | 9<br>[6] | 18<br>[11] |